Chapter 1 Responses to Comments

1.1 Response to Comments Introduction

During the public review period (June 10 to July 25, 2022) for the Recirculated Sections of the Final EIR, the City of Santee (City) received 121 comment letters. The comment letters and the City's responses to them are included in this chapter. The responses to comments are based on the California Environmental Quality Act (CEQA) Guidelines, Section 15088(c), Evaluation of and Response to Comments, which states the following:

> The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice. The level of detail contained in the response, however, may correspond to the level of detail provided in the comment (i.e., responses to general comments may be general). A general response may be appropriate when a comment does not contain or specifically refer to readily available information, or does not explain the relevance of evidence submitted with the comment.

Table 1-1, Summary of Public Comments on the Recirculated Sections of the Final Revised EIR, provides a list of the comment letters received from agencies, organizations, and individuals during the public review period for the Recirculated Sections. All comments and responses to comments have been assigned a letter (F [Federal Agency], S [State Agency], L [Local/Regional Agency], O [Organizations], and I [Individuals]). A copy of each comment letter with corresponding responses is provided in this chapter.

As the CEQA lead agency and pursuant to California Public Resources Code, Section 21092.5, and CEQA Guidelines, Section 15088(b), the City provided each public agency that commented on the Recirculated Sections a copy of the City's response to those comments at least 10 days before certifying the Final Revised EIR.

Table 1-1. Summary of Public Comments on the Recirculated Sections of the Final Revised EIR

No.	Commenter	Date
Federal Agencies		
F1	U.S. Fish and Wildlife Service	July 25, 2022
State Agencies		
S1	California Department of Fish and Wildlife	July 25, 2022
S2	California Department of Transportation	July 25, 2022
Local/Regional Agencies		
L1	County of San Diego	July 11, 2022
Organizations		
O1	San Diego Gas & Electric	July 21, 2022
O2	Preserve Wild Santee	July 24, 2022
O3	Endangered Habitats League	July 25, 2022
O4	California Native Plant Society	July 25, 2022
O5	California Chaparral Institute	July 25, 2022
Individuals		
I1	santeebutch	June 10, 2022
I2	Janet McLees	July 5, 2022
I3	Linda and Brian Esry	July 8, 2022
I4	Lisa Farrell	July 8, 2022
I5	Len Gallo	July 8, 2022
I6	Christine Leidhoff	July 8, 2022
I7	Richard Rohwer	July 8, 2022
I8	Christine Sanchez	July 8, 2022
I9	Ellen Shively	July 8, 2022
I10	Tanner Wheatley	July 8, 2022
I11	Kristy Hobbs	July 9, 2022
I12	Laurie Lucie	July 9, 2022
I13	Joanie Riegel	July 9, 2022
I14	Marilyn Stella	July 9, 2022
I15	Cathy Bea	July 10, 2022
I16	Matt Cantor	July 10, 2022
I17	Colleen Cochran	July 10, 2022
I18	Mike Dolan	July 10, 2022
I19	Mike Helms	July 10, 2022
I20	Thomas Jefferson	July 10, 2022
I21	Sandy Kuntz	July 10, 2022
I22	William Marshall	July 10, 2022
I23	Patricia Sebastian	July 10, 2022

Table 1-1. Summary of Public Comments on the Recirculated Sections of the Final Revised EIR

No.	Commenter	Date
I24	Jeff Thomson	July 10, 2022
I25	Karen Till	July 10, 2022
I26	Al Crespo	July 11, 2022
I27	Benjamin Johnon	July 11, 2022
I28	Debbie Mitton	July 11, 2022
I29	Kevin and Christine Nedvecki	July 11, 2022
I30	Katie Osabe	July 11, 2022
I31	Daryl Paige	July 11, 2022
I32	Ronda	July 11, 2022
I33	Don Wood	July 11, 2022
I34	Mary Chavez	July 12, 2022
I35	Gloria Gerak	July 12, 2022
I36	Stephen Houlahan	July 12, 2022
I37	William Marshall	July 12, 2022
I38	Marsha Taylor	July 12, 2022
I39	Vicki Call	July 13, 2022
I40	Janice Jones	July 13, 2022
I41	Jeanne Raimond	July 13, 2022
I42	Tom and Debbie White	July 13, 2022
I43	Janice Barnhart	July 14, 2022
I44	Diane Hamilton	July 14, 2022
I45	Mike Dolan	July 15, 2022
I46	Bill Barron	July 16, 2022
I47	Herman and Laurie Doidge	July 16, 2022
I48	Shawna Harpole	July 16, 2022
I49	Amy Jamieson	July 16, 2022
I50	Dale Jamieson II	July 16, 2022
I51	Christina Dorminy	July 17, 2022
I52	Julia McMillan	July 17, 2022
I53	Barbara Waldowski	July 17, 2022
I54	Marianne Lamoureux	July 18, 2022
I55	Iliana Sonntag	July 18, 2022
I56	Greg Lambert	July 19, 2022
I57	Philip Londo	July 19, 2022
I58	Craig Hattox	July 20, 2022
I59	Susan Mauri	July 20, 2022
I60	Eric Morgan	July 20, 2022

Table 1-1. Summary of Public Comments on the Recirculated Sections of the Final Revised EIR

No.	Commenter	Date
I61	Claude and Julie Naggar	July 20, 2022
I62	Michael Noe	July 20, 2022
I63	Sandy Schielke	July 20, 2022
I64	Bob and Arla Axtman	July 21, 2022
I65	Kari Cureton	July 21, 2022
I66	Mary Hyder	July 21, 2022
I67	Tiffany Keller	July 21, 2022
I68	Michele Perchez	July 21, 2022
I69	Katharine Turkle	July 21, 2022
I70	Kristie Burson	July 22, 2022
I71	Shaune Dulay	July 22, 2022
I72	Michele Perchez	July 22, 2022
I73	Nelly Purvis	July 22, 2022
I74	Sabrina	July 22, 2022
I75	Patricia Setter	July 22, 2022
I76	Theresa Acerro	July 23, 2022
I77	Adam Bea	July 23, 2022
I78	Day Family	July 23, 2022
I79	Mark DiPari	July 23, 2022
I80	Barbara Foy	July 23, 2022
I81	Richard Gadler	July 23, 2022
I82	Janet Garvin	July 23, 2022
I83	Suzette Gerard	July 23, 2022
I84	Richard Haines	July 23, 2022
I85	Laura Hunter	July 23, 2022
I86	Rosemary Hutzley	July 23, 2022
I87	David McNeil	July 23, 2022
I88	Patricia Sebastian	July 23, 2022
I89	Belluto51	July 24, 2022
I90	Vicki Call	July 24, 2022
I91	Dan Delgado	July 24, 2022
I92	Erin Doherty	July 24, 2022
I93	David Duggar	July 24, 2022
I94	Mary Jo Eager	July 24, 2022
I95	Elizabeth Harter	July 24, 2022
I96	Scott Huang	July 24, 2022
I97	Samantha Hurst	July 24, 2022

Table 1-1. Summary of Public Comments on the Recirculated Sections of the Final Revised EIR

No.	Commenter	Date
I98	Bill Kuni	July 24, 2022
I99	Michele Perchez	July 24, 2022
I100	Susan Piszkin	July 24, 2022
I101	Jennifer Smith	July 24, 2022
I102	Loren Spector	July 24, 2022
I103	Tanya and John Callis	July 25, 2022
I104	Tina Deesen	July 25, 2022
I105	Janet Garvin	July 25, 2022
I106	Gloria Gerak	July 25, 2022
I107	Sharon Guerrero	July 25, 2022
I108	Rob, Elena, and Alina Leholm	July 25, 2022
I109	Richard Mutch	July 25, 2022
I110	Michael Ranson	July 25, 2022
I111	Steve Stelman	July 25, 2022
I112	Alexandra Whipple	July 25, 2022

The comment letters have been divided into individual comments with each comment containing a single theme, issue, or concern. Each comment is bracketed and assigned a letter and number. Comment letters have been reduced to fit on the left side of a single page. The corresponding City response and letter-number combination is provided on the right side of the page.

Any revisions to the Recirculated Sections included in the responses to comments are indicated as underlined text (e.g., <u>underlined text</u>), and deletions are indicated as strikethrough text (e.g., ~~strikethrough text~~). In Chapter 2, text changes resulting from the comments received are also indicated as underlined and/or as strikethrough text. Please note that the revisions do not affect the conclusions of the Final Revised EIR.

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THEMATIC RESPONSE 1 - RECIRCULATION AND SCOPE OF REVIEW CLAIMS

This thematic responds to comments stating the City exceeded the scope of the Recirculated Sections and that the entire EIR must be recirculated. The City appropriately revised and recirculated those sections of the Revised Final EIR that the trial court found deficient. The City need not respond to comments that are not related to the adequacy of the Recirculated Sections.

Here, the trial court ruling, judgment, and writ make it clear that only portions of the EIR related to wildfire/evacuation were found to be deficient and had to be corrected. Pursuant to CEQA, if revisions to the EIR are limited to chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified (CEQA Guidelines section 15088.5(c)). Accordingly, the City determined that the Recirculated Sections would be circulated for public comment. The Preface explains that, as to those portions of the Final Revised EIR that were not found deficient and that were not being recirculated, the City would not seek or entertain any further comments. (CEQA Guidelines section 15088.5(f)(2).) The Notice of Availability further requested that comments be limited to the recirculated documents described. To the extent comments do not raise any specific issue related to the adequacy of the Recirculated Sections, in accordance with CEQA Guidelines section 15088.5(f)(2), no further response is required.

Further, case law holds that issues concerning the adequacy of an EIR that were litigated, or that could have been litigated, in a prior lawsuit may not be re-litigated in a second lawsuit after the deficiencies in an EIR identified in the first lawsuit have been corrected. In *Ione Valley Land, Air, and Water Defense Alliance, LLC v. County of Amador* (2019) 33 Cal.App.5th 165 (2019), the County corrected and then circulated a portion of an EIR addressing traffic that was previously found to be deficient. The petitioner then sued, claiming that the EIR was deficient in several other respects. The Court of Appeal held that decertification of the EIR did not allow new challenges on the parts of the EIR that were not found deficient. "[W]hether the EIR has been decertified does not alter the fact that the sufficiency of the EIR has been litigated and resolved." (33 Cal.App.5th at p. 172.)

Refer also to *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1112, as modified (Apr. 9, 2004); *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 480-481 ("any challenge to an EIR or other agency action arising from facts in existence before the entry of judgment must be asserted in the proceeding before the entry of judgment. The failure to assert such a challenge before the entry of judgment … precludes a party from asserting the challenge in connection with post-judgment proceedings concerning compliance with the writ"); *Tiburon Open Space Committee v. County of Marin* (2022) 78 Cal.App.5th 700, 752 (stating that CEQA litigation is not intended to become " 'a never-ending battle of attrition with ever-changing targets for project opponents to aim for'" and " 'is not meant to cause paralysis' " or be "manipulated to be a formidable tool of obstruction, particularly against proposed projects that will increase housing density.")

Here, other than wildfire/evacuation, the Final Revised EIR was litigated sufficient on all other issues previously raised or that could have been raised. Environmental issues that were addressed in the Final Revised EIR and raised in the prior CEQA litigation and found to not violate CEQA,

and those issues concerning the adequacy of the Final Revised EIR that could have been raised in the CEQA litigation but were not, are no longer subject to challenge. (*The Inland Oversight Committee v. City of San Bernardino* (2018) 27 Cal.App.5th 771, 779-780.)

In summary, the City appropriately limited the scope of recirculation to portions of the EIR and limited responses to comments to those related to the adequacy of the Recirculated Sections.

THEMATIC RESPONSE 2 – REFERENDUM AND MEASURE N APPLICABILITY

NO PUBLIC VOTE IS REQUIRED

This thematic responds to comments that state that the proposed project must be subject to a public vote pursuant to the referendum petition that was brought related to the prior project approvals and/or Santee's Measure N. The City disagrees with the comments. A referendum petition was brought seeking to overturn the prior project's General Plan Amendment (Resolution 094-2020). The prior proposed project approvals – including the General Plan Amendment – were set aside because of a trial court order in a CEQA case challenging the prior project. This court order and set aside mooted the referendum. It was therefore removed from the ballot. The prior referendum does not apply to the current proposed project and approvals being sought. The Elections Code also does not apply to the proposed project because it does not seek City approval of any legislative act that would be enacted by ordinance.

As pertains to Measure N, the City received comments asserting that the voters passed Measure N to "assure Santee residents make the final decision at the ballot on Fanita Ranch." This comment appears to confuse Measure N – a citywide initiative – with the referendum petition against the prior Fanita Ranch project. Measure N was not specific to Fanita Ranch. It also does not mandate a vote on the proposed project. The proposed project would not trigger a public vote under the language of Measure N as the City found Essential Housing projects exempt from Measure N pursuant to Policy 12.4 of that initiative, and the proposed project does not propose a General Plan Amendment or other similar approval that would subject it to a vote under that initiative. Further, the legal effect of Measure N may require judicial interpretation under Government Code section 66300 (b)(1)(B), which prohibits voters from exercising local initiative power from enacting a development policy, standard, or condition that imposes a moratorium or similar restriction on housing development, other than to specifically protect against an imminent threat to the health and safety of persons residing in, or within the immediate vicinity of, the subject area. (See City Attorney Impartial Analysis of Measure N.)

<u>Referendum Against the Prior Project was Rescinded due to a Court Order Voiding Project Approvals in CEQA Litigation</u>

On September 23, 2020, the City Council adopted several resolutions approving the previously requested discretionary actions for the Fanita Ranch project (previously requested discretionary approvals are referred to herein as the "prior project"). The prior project included adoption of Resolution 094-2020, which adopted a General Plan Amendment (Case File GPA2017-2).

On October 29, 2020, proponents of a Referendum Against a Resolution Passed by the City Council of the City of Santee (Resolution 094-2020) filed a Referendum petition ("Referendum") seeking to overturn Resolution 094-2020 and thereby rescind the General Plan Amendment. On January 13, 2021, the City Council determined to submit the Referendum to the voters consistent with the Elections Code.

However, in the interim, a lawsuit was filed challenging the adequacy of the Final Revised EIR ("EIR") certified for the prior project. On March 25, 2022, the trial court entered judgment and a writ of mandate ("order") directing the City to set aside both certification of the EIR and the approvals for the Project, including its General Plan Amendment (Resolution 094-2020). In response to and as a direct result of the trial court's order, on May 25, 2022, the City Council adopted a resolution setting aside the prior project approvals, including Resolution 094-2020.

Accordingly, the prior project approvals were voided as a result of the CEQA litigation, rendering the Referendum moot (Civ. Code, § 3532). For that sole reason, the Santee City Council acted to remove the Referendum from the ballot by Resolution 083-2022 on June 8, 2022.

Thus, the prior project approvals were repealed as a result of a court order in the CEQA litigation. The prior Referendum was moot, and does not apply the current proposed project. Further, the proposed project does not seek re-passage of the challenged General Plan Amendment or any legislation that may be subject to a referendum.

Ordinance No. 592 and Housing Need

The City's Housing Element (Sixth Cycle: 2021-2029) was adopted by the City Council on July 14, 2021, and identified a number of ways in which the extraordinary state-declared housing supply crisis[1] is resulting in severe adverse consequences within the City, including delayed housing production, lack of housing affordability, cost-burdened households, "missing middle" housing, lack of "move up/move down" housing, aging and deteriorating housing stock, and overcrowding (particularly among renters). The City Council identified an urgent need to expeditiously respond to the statewide and local housing crisis.

On August 25, 2021, pursuant to its authority under California Government Code section 36937(b), the City adopted Urgency Ordinance No. 592, an Essential Housing Program, to boost housing production and improve housing affordability in the City (Appendix R). Urgency Ordinance No. 592 recited the City Council's intent to "declare a City-wide housing emergency, to be in effect until August 25, 2026, and to enact the 'Essential Housing Program' to: (a) maximize housing production to combat this current housing crisis/emergency; and (b) expeditiously allow and encourage a range of locally-desirable housing types and lot sizes for all income levels, including housing affordability options, that will enhance homeownership and for-rent living opportunities within the City.'"

The City Council found adoption of Urgency Ordinance No. 592 necessary to comply with state law governing the provision of housing, including but not limited to, Government Code sections 65583 and 65584, and additional affordable housing requirements, and necessary to achieve the goals set forth in the City's Housing Element. The Ordinance permits no greater density than is necessary to accommodate required housing and is narrowly tailored to the housing needs of the

[1] At the state level, the Legislature enacted the Housing Crisis Act of 2019 (SB 330), which declared a statewide housing emergency resulting from a lack of housing supply. SB 330 identified the number of ways the 40 years of housing undersupply has resulted in such a severe shortage as to threaten the economic, environmental, and social quality of life in California.

City. Further, alternative sites for Essential Housing Projects are not available to satisfy the requirements of state housing law. These findings were supported by extensive Findings Constituting the Urgency, which describe the housing emergency experienced in the City and California. Ordinance No. 592 took effect immediately upon adoption. The City filed a Notice of Exemption pursuant to CEQA on August 25, 2021. No person challenged the City's adoption of Ordinance 592.

Urgency Ordinance No. 592 (the City's Essential Housing Program) provides an alternative process to boost housing production and improve housing affordability for housing projects that meet specified criteria through 2026 (City of Santee 2021). Under the Program, projects that follow the procedures and meet the strict requirements of the program are able to take advantage of expedited City processing, are deemed to be in compliance with the Santee General Plan, including the Land Use Element and Housing Element, and do not require an amendment to the Santee General Plan or other legislative act for approval. Instead, by complying with the City's Essential Housing Project Credits Assessment Guide and Checklist, Essential Housing Projects will have demonstrated Santee General Plan consistency by furthering the objectives and policies of the plan while not obstructing their attainment (Appendix R).

Urgency Ordinance No. 592 controls over any other City plan or ordinance in the event of a conflict, with its interpretation being afforded the fullest possible weight to the interest, approval, and provision of housing (Appendix R). Certification as an Essential Housing Project is available for use to expedite (1) any new application for a Housing Development Project, (2) any Housing Development Project currently under City review, or (3) any approved, entitled, and/or permitted Housing Development Project not yet built by the date application for certification is made.

The proposed project has elected to pursue the streamlining opportunities provided by the City's Essential Housing Program. The project applicant submitted an application under the City's Essential Housing Program for the proposed project in early December 2021. On December 27, 2021, the City's Director of Development Services certified the proposed project as an Essential Housing Project based on the criteria adopted by the City Council (Appendix R). The proposed project would address the City's housing crisis by providing a mix of residential and nonresidential uses and a mix of housing types and sizes, and provide affordable housing. The stringent environmental and Santee General Plan consistency criteria established by the Essential Housing Program would be met. Compliance with Essential Housing Program permits the Fanita Ranch project to proceed without a General Plan Amendment, Specific Plan, Rezone, Development Agreement, or other legislative act prior to approval. (Urgency Ordinance No. 592, Section 4 (D)(1).) Accordingly, the proposed project discretionary approvals now consist of the following:

- EIR Certification
- Vesting Tentative Map
- Development Review Permit
- Conditional Use Permits

Please refer to Recirculated Sections, Chapter 3, Project Description.

Thus, the proposed project does not seek re-passage of the challenged General Plan Amendment or any legislation that may be subject to a referendum.

Measure N Does Not Require a Public Vote on the Proposed Project

At the November 2020 election, City voters adopted Measure N, an initiative measure which establishes a voter approval requirement for certain legislative actions that would increase residential density or otherwise intensify land use over that currently permitted by the General Plan and zoning. As noted above, projects that follow the procedures and meet the strict requirements of the Essential Housing Program are deemed to be in compliance with the Santee General Plan, including the Land Use Element and Housing Element, and do not require an amendment to the Santee General Plan or other legislative act for approval. Consequently, Measure N by its own terms does not apply to the proposed project, and thus no public vote is required.

Measure N added Policies 12.1 and 12.2 to the General Plan, which address the discrete circumstances when a vote is required. Policy 12.1 provides that no General Plan amendment, Planned Development Area, or new Specific Planning Area shall be adopted which would (1) increase the residential density permitted by law; (2) change, alter, or increase the General Plan Residential Land Use categories if the change intensifies use; or (3) change any residential designation to commercial or industrial designation on any property, or vice versa, if the change intensifies use, unless and until such action is approved by City voters. Policy 12.2 provides a voter approval requirement for any change to the "the slope criteria, minimum parcel sizes, and lot averaging provisions of the General Plan that would permit increased density or intensity of use shall be adopted unless and until the change is approved by City voters."

The proposed project does not include any of the discretionary actions described in Policies 12.1 and 12.2.

Moreover, even if such discretionary actions were sought in connection with the proposed project, Policy 12.4 provides an exception to the voter approval requirement:

> The voter approval requirement of subsection (a) shall not apply where the General Plan amendment is necessary to comply with state or federal law governing the provision of housing, including, but not limited to affordable housing requirements. This exception applies only if the City Council first makes each of the following findings based on substantial evidence in the record:
>
> (1) a specific provision of state or federal law requires the City to accommodate the housing that will be permitted by the amendment;
>
> (2) the amendment permits no greater density than that necessary to accommodate the required housing; and
>
> (3) an alternative site that is not subject to the voter approval requirement in this Policy is not available to satisfy the specific state or federal housing law.'

In adopting Urgency Ordinance No. 592, the City Council found it and the Essential Housing Projects that meet the stringent requirements of Ordinance No. 592 exempt from Measure N's vote requirements. The City specifically found as follows:

> The City Council finds that the adoption of this Ordinance is necessary to comply with state law governing the provision of housing, including but not limited to, Government Code sections 65583 and 65584 and additional affordable housing requirements, and is necessary to achieve the goals set forth in the City's Housing Element. The City Council finds that this Ordinance permits no greater density than is necessary to accommodate the required housing. The City Council finds that the criteria identified in the Essential Housing Program as establishing eligible Essential Housing Project sites have been narrowly tailored to the housing needs of the City, and alternative sites for Essential Housing Projects are not available to satisfy the requirements of state housing law.

(Appendix R [Urgency Ordinance No. 592].)

The City also declared that Urgency Ordinance No. 592 controls any other City plan or ordinance in the event of a conflict, with its interpretation to be afforded the fullest possible weight to the interest, approval, and provision of housing. (Appendix R, Measure N [Policy 12.4].)

No person challenged the City's adoption of Ordinance 592. It has been in effect for over a year and is being utilized by at least three separate projects to provide needed housing in the City.

Further, utilizing the Essential Housing Program, the proposed project would implement housing in an already designated Planned Development land use area pursuant to a development plan and other non-legislative entitlements. The proposed project does not require an amendment to the General Plan, change to the provisions of the General Plan, or other legislative act for approval under Ordinance No. 592. In addition, the proposed project approval would not include the adoption of a Planned Development Area, new Specific Planning Area, or any change to the slope criteria, minimum parcel sizes, or lot averaging provisions of the General Plan. Thus, the vote requirements of Policies 12.1 and 12.2 of Measure N do not apply.

The exemption of the proposed project from Measure N as necessary to accommodate housing under state law is well supported. Fanita Ranch is identified throughout the Housing Element as serving and assisting to meet the City's housing needs. In the Housing Element's "Credits Towards the RHNA" section, including at Table 34, RHNA Credits and Remaining Need, and Table 36: Fanita Ranch Land Use Summary, the Housing Element identifies Fanita Ranch as providing for at least 2,949 housing units, including 435 moderate and 2,514 above-moderate income housing units (up to 3,008 housing units if developed without a school). (City of Santee 2022a.) Consistent with the Housing Element, the proposed project would satisfy the City's moderate and above and above-moderate housing need. In recently commenting on the City's Housing Element implementation, the Department for Housing and Community Development specifically called out the proposed project, stating in its July 12, 2022 letter that, "HCD encourages the City to diligently pursue completion of entitlement of the Fanita Ranch development." The proposed project was appropriately identified to as an Essential Housing Project tailored to meet the needs of the City and meet the requirements of state housing law.

The City has received certain comments that additional housing in the City is not needed or that only low income or affordable housing is needed. To the contrary, the Housing Element and Ordinance No. 592 identify the numerous challenges to providing housing that meets the needs of the City consistent with satisfying state housing law. The City specifically identified delayed housing production, lack of housing affordability, cost-burdened households, "missing middle" housing, missing move up/ move down housing, aging and deteriorating housing stock, and overcrowding (particularly among renters), and low vacancy rates as challenges the City faces in meeting the housing needs of its residents. (Ordinance No. 592) The City also did not meet the RHNA allocation in the prior cycle. (*Id.*)

Recent studies underscore the continuing housing need. For instance, a recent study from the California Center for Jobs & the Economy and California Business Roundtable found that, despite the declared housing crisis, California housing production has remained stagnant, producing on an annual average about one-third of the homes needed to meet the Governor's described 3.5-million-unit housing shortfall, or about 110,784 homes per year. (California Center for Jobs & the Economy and California Business Roundtable. Hernandez, Jennifer L. (August 2022) *Anti-Housing CEQA Lawsuits Filed in 2020 Challenge Nearly 50% of California's 100,000 Annual Housing Production*, https://centerforjobs.org/wp-content/uploads/Full-CEQA-Guest-Report.pdf.) The lack of new housing supply both prevents new housing from coming to the market and the downward filtering of older units to become more affordable homes, leaving households in the City and region severely cost-burdened – a burden Santee feels keenly. (See, Ordinance No. 592.) And as noted above, the proposed project will provide affordable housing to assist the City in meeting its RHNA obligation.

Another recent study found that when new market-rate units are not constructed in a city or region, existing units in lower-income census tracts are prevented from becoming affordable and, instead, are repurposed as like-new luxury housing, becoming more expensive. By contrast, "when 100 new [market rate] units are constructed …, the resulting "chain of moves" releases—within five years—about 45-70 units in below-median-income census tracts in the same metro area, and 17-39 units in bottom-quintile census tracts (Mast, 2021)." In this type of functioning housing market, the typical housing unit mostly filters downward to become more affordable as it ages. As much as 90% of the increase in affordable units comes from this downward filtering (versus just 10% from new affordable builds). (*A Review of California's Process for Determining, and Accommodating, Regional Housing Needs* (January 2022) RHNA Audit Report-9.pdf (ucdavis.edu) [Background paper prepared by UC Davis School of Law, UC Irvine School of Social Ecology, and UCLA Luskin School of Public Affairs for the California State Auditor in relation to the audit ordered by the Joint Legislative Audit Committee on Oct. 11, 2021.]) While it is certainly important that the City meet its RHNA allocations regarding new "affordable" housing, the importance of continuing to provide housing stock in general to affordability cannot be overlooked.

Finally, to the extent any councilmember may have implied the proposed project is seeking a General Plan Amendment and, for that reason, is subject to a public vote, they were either mistaken or misquoted. The proposed project does not request a General Plan Amendment and is not subject

to Measure N. The proposed project and its requested entitlements and approvals will be presented to the councilmembers at a future public hearing for full consideration.

THEMATIC RESPONSE 3: URGENCY ORDINANCE NO. 592 AND GENERAL PLAN CONSISTENCY

Urgency Ordinance No. 592 and Consistency with Santee General Plan

This thematic responds to comments challenging the City of Santee's (City) adoption of Urgency Ordinance No. 592, the Essential Housing Program, and assert that a General Plan Amendment is needed because the proposed project is inconsistent with the General Plan. The City does not concur with the comments.

The Santee City Council unanimously adopted Ordinance No. 592 on August 25, 2021, pursuant to the City's authority under California Government Code section 36937(b) to adopt urgency legislation. Ordinance No. 592 establishes the City's Essential Housing Program, which provides a streamlining tool for projects that demonstrate General Plan consistency and environmental excellence by meeting the stringent requirements of the City of Santee Essential Housing Project Credits Assessment Guide. Ordinance No. 592 specifically exempts compliant projects from needing to seek legislative approvals, which are known to delay housing. Such projects must still comply with CEQA. The Council found Ordinance No. 592 was of immediate need to respond to the statewide and local housing availability and affordability emergency. No timely legal challenge was brought to Ordinance No. 592.

To be General Plan consistent, a project need not be in perfect conformity with each and every policy set forth in a general plan, but must be compatible with its general policies and objectives. Section 4.10, Land Use and Planning, of the Recirculated Sections discusses the proposed project's consistency with the Santee General Plan through compliance with the Ordinance No. 592's Essential Housing Project Credits Assessment Guide and Checklist; consistency with the General Plan Housing Element; consistency with the Planned Development (PD) land use designation; consistency with the General Plan's "Guiding Principles" for the Fanita Ranch site; and consistency with other goals, objectives, and policies of the General Plan.

Facts Supporting Declared Housing Emergency and Strategies to Meet Future Housing Needs

California

There is no question California is in the midst of a housing emergency. The State Legislature, Governor, and courts have recognized that decades of stagnant housing production has resulted in an unprecedented, deepening statewide housing crisis, perpetuating the state's nearly last place ranking across the U.S. for homeowner rates and housing supply. (Gov. Code, § 65589.5, subd. (a)(1)(B), (a)(2)(E), (F).) As found by the Legislature:

> "California has a housing supply and affordability crisis of historic proportions. The consequences of failing to effectively and aggressively confront this crisis are hurting millions of Californians, robbing future generations of the chance to call California home, stifling economic opportunities for workers and businesses, worsening poverty and homelessness, and undermining the state's environmental and climate objectives." (Gov. Code, § 65589.5, subd. (a)(2)(A).)

> "While the causes of this crisis are multiple and complex, the absence of meaningful and effective policy reforms to significantly enhance the approval and supply of housing affordable to Californians of all income levels is a key factor." (§ 65589.5, subd. (a)(2)(B).)
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> "California's housing picture has reached a crisis of historic proportions despite the fact that, for decades, the Legislature has enacted numerous statutes intended to significantly increase the approval, development, and affordability of housing for all income levels, including this section." (§ 65589.5, subd. (a)(2)(J).)
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> "The Legislature's intent in enacting this section in 1982 and in expanding its provisions since then was to significantly increase the approval and construction of new housing for all economic segments of California's communities by meaningfully and effectively curbing the capability of local governments to deny, reduce the density for, or render infeasible housing development projects and emergency shelters. That intent has not been fulfilled." (§ 65589.5, subd. (a)(2)(K).)

(*Ruegg & Ellsworth v. City of Berkeley* (2021) 63 Cal.App.5th 277, 296, reh'g denied (May 19, 2021), review denied (July 28, 2021).)

The housing crisis is severely impacting California families, resulting in increased overcrowding, homelessness, and excessive commutes, particularly for low- and middle-income working families. (Gov. Code § 65589.5, subd. (a)(1)(C).)

Limiting the supply of housing in the face of stable or growing demand pushes rents and home sale prices up. Facing a backlog of nearly 2,000,000 units and growing need, in October 2017, Governor Gavin Newsom called for 3.5 million new homes to be built in the state through 2025. (Gov. Code § 65589.5, subd. (a)(1)(C), https://medium.com/@GavinNewsom/the-california-dream-starts-at-home-9dbb38c51cae.) The State Legislature passed Senate Bill 330 (Skinner, 2019), the Housing Crisis Act of 2019 (SB 330), which declared a statewide housing emergency and adopted a suite of laws to hasten housing production. Senate Bill 8 (Skinner, 2021) extended the declared housing emergency and SB 330 to January 1, 2030, and expanded the Act. Since then, additional legislation has been adopted by the State Legislature in an effort to expand the supply of housing and meet state and local needs including, but not limited to, SB 7, SB 9, SB 10, SB 290, SB 478, SB 791, AB 571, and AB 1398. The State Legislature's actions have included actions by Urgency Ordinance such that housing laws take immediate effect, and explicitly preempting the referendum and initiative power to prevent delays by the electorate in light of the urgent housing supply and affordability crisis.

The consequences of California's housing supply crisis are fully documented in Government Code section 65589.5 and SB 330's Legislative findings and declarations. Among the consequences are a "lack of housing to support employment growth, imbalance in jobs and housing, reduced mobility, urban sprawl, excessive commuting, and air quality deterioration." (Gov. Code, § 65589.5, subd. (a)(1)(C).) "An additional consequence of the state's cumulative housing shortage is a significant increase in greenhouse gas emissions caused by the displacement and redirection of populations to states with greater housing opportunities, particularly working- and middle-class

households. California's cumulative housing shortfall therefore has not only national but international environmental consequences." (Gov. Code, § 65589.5, subd. (a)(2)(I).)

"The lack of housing … is a critical problem that threatens the economic, environmental, and social quality of life in California." (SB 330, Sec. 3, Gov. Code, § 65589.5, subd. (a)(1)(A).) The housing crisis "harms families across California" (SB 330, Sec. 2, subd. (a)(6)(A)-(E)); "severely impact[s] the state's economy" (Sec. 2, subd.(a)(11)(A)-(C)); and "harms the environment" (Sec. 2, subd.(a)(12)(A)-(B)).

By contrast, when "Californians have access to safe and affordable housing, they have more money for food and health care; they are less likely to become homeless and in need of government-subsidized services; their children do better in school; and businesses have an easier time recruiting and retaining employees." (Gov. Code, § 65589.5, subd. (a)(2)(H).)

Local

Like the State, the City is experiencing a prolonged period of housing undersupply. During the previous 11-year cycle (2010-2020), the City fell far short of its Regional Housing Needs Assessment (RHNA) allocation, issuing building permits for just 1,374 (37.5 percent) of its allocated 3,660 units.

On July 14, 2021, the City adopted its current Housing Element (Sixth Cycle: 2021-2029) (Housing Element), which provides an assessment of current and future housing needs and constraints in meeting these needs. (See, Housing Element, p. 1; Gov. Code, § 65580, *et seq*.) The City's Housing Element identified a number of ways in which the housing supply crisis is resulting in severe adverse consequences within the City, including delayed housing production, lack of housing affordability, cost-burdened households, "missing middle" housing, lack of "move up/move down" housing, aging and deteriorating housing stock, and overcrowding (particularly among renters). Specifically:

- 48 percent of renter households and 31 percent of owner households face a housing cost burden, meaning they pay more than 30 percent of their income on housing and therefore have limited remaining income for other necessities. Most drastically, a majority of lower- and moderate- income households in the City experience housing cost burden, with an incidence among very low income homeowners of 81 percent. (Housing Element, p. 14; Ord. No. 592.)

- The City's housing stock is aging, and new housing stock is needed to prevent widespread housing deterioration. Approximately 80 percent of the City's housing stock is more than 30 years old and 26 percent is more than 50 years old. Approximately 88 percent of the City's housing stock will exceed 30 years of age by 2029. (Housing Element, pp. 23-24; Ord. No. 592.)

- 7.1% of renters in the City experience overcrowding. (Housing Element, pp. 13-14.)

- Vacancies for home ownership was one percent, below the optimal vacancy rate of 1.5 and 2.0 percent to balance housing demand and supply. Vacancies for home rentals was 2.9

percent, similarly below the optimal rate of 5.0 to 6.0 percent. (Housing Element, p. 25.) Low vacancy rates force prices up, make it more difficult for low- and moderate- income households to find housing, and increases the incidence of overcrowding. (Housing Element, p. 25; Ord. No. 592; See also Public Policy Institute of California information showing that the shortfall of available rental homes in the San Diego region exceeds 140,000 units and growing; and *Apartment Vacancies Plunged in San Diego County Over Past Year as Rents Rose 15%*, June 14, 2022, https://timesofsandiego.com/business/2022/06/14/apartment-vacancies-plunged-in-san-diego-county-over-past-year-as-rents-rose-15/ .)

- The housing shortfall has contributed to increases in median rental and home prices in the City. Since 2015, median home sale prices in Santee have increased by almost 50 percent. Moderate- income households are unable to purchase adequately sized homes at current prices. As for rentals, between 2011 and 2019, the average price increased between 63 and 105.1 percent. (Housing Element, pp. 25-30.)

  Further, since the Housing Element was prepared, prices have continued to increase at a faster rate. In 2020, the median sale price of $535,000 is now approaching $800,000, an almost 50% increase in under two years. (See, https://www.zillow.com/santee-ca/home-values/ [average home value $797,106], accessed July 25, 2022; https://www.redfin.com/city/17939/CA/Santee/housing-market [median sale price $781,000], accessed July 25, 2022)

- The City's median household income is $84,226 (in 2018), well below the annual income needed to purchase a home in the City. (Housing Element, pp. 25-30.)

Against this backdrop, the City Council identified an urgent need to expeditiously respond to the statewide and local housing crisis.

City Adoption of Urgency Ordinance No. 592 to Boost Housing Production and Respond to Housing Emergency

Taking its lead from the State and reciting its desire to "boost housing production and improve housing affordability within the City to meet the full spectrum of housing needs for its residents and households," on August 25, 2021, the City adopted Urgency Ordinance No. 592, an Essential Housing Program. (Recirculated Sections, Appendix R). Urgency Ordinance No. 592 is authorized pursuant to the City's authority under California Government Code section 36937(b), which allows a city to adopt urgency ordinances for the "immediate preservation of the public peace, health or safety," where that ordinance contains a declaration of the facts constituting the urgency and is passed by a four-fifths vote of the city council.

Adopted by a unanimous vote (5-0) of the City Council, Urgency Ordinance No. 592, expresses the Santee City Council's intent to "declare a City-wide housing emergency, to be in effect until August 25, 2026, and to enact the 'Essential Housing Program' to: (a) maximize housing production to combat this current housing crisis/emergency; and (b) expeditiously allow and encourage a range of locally-desirable housing types and lot sizes for all income levels, including

housing affordability options, that will enhance homeownership and for-rent living opportunities within the City.'" Ordinance No. 592 contains lengthy findings of fact describing the urgency and current crisis that gave rise to the need to immediately enact Ordinance No. 592 for the preservation of the public peach, health, and safety.

Urgency Ordinance No. 592 (the City's Essential Housing Program) provides an alternative process to boost housing production and improve housing affordability for housing projects that meet specified criteria through 2026 (City of Santee 2021). (Recirculated Sections, Section 4.10, Land Use and Planning; Appendix R.) Under the Program, projects that follow the procedures and meet the strict Program requirements are able to take advantage of expedited City processing; are deemed to be in compliance with the Santee General Plan, including the Land Use Element and Housing Element; and do not require an amendment to the Santee General Plan or other legislative act for approval. Instead, by complying with the City's Essential Housing Project Credits Assessment Guide and Checklist, Essential Housing Projects will have demonstrated Santee General Plan consistency by furthering the objectives and policies of the plan while not obstructing their attainment (Appendix R).

Specifically, the City Council found that compliance with the Santee Essential Housing Project Credits Assessment Guide shall ensure consistency with the City's General Plan by:

a. Promoting economical and efficient use of the land while providing a variety of housing choices and mixed-use development that will create and maintain a high-quality environment;

b. Preserving natural and scenic qualities of open spaces and areas;

c. Promoting design and construction techniques that are responsive to relevant environmental resources and minimize hazards;

d. Requiring energy conservation through solar and other renewable energy sources; Ensuring adequate provision of community public services, trails, and parks and recreation facilities to serve new and existing communities;

e. Supporting a balanced transportation network that meets future circulation needs and promotes alternative modes of travel and site design to reduce vehicular trips, save energy, and improve air quality; and

f. Enhancing quality of life and revitalizing City neighborhoods through new residential development.

The City Council exempted qualifying projects from seeking legislative acts for approval because such acts have been consistently found to "delay and add to the cost of housing." (Ordinance No. 592, Section 2 (D)(2) and (3); citing, California Legislative Analyst Office (LAO) report titled, "California's High Housing Cost: Causes and Consequences," LAO 2015, pp. 13-17, 20, 35 [the LAO is a nonpartisan fiscal and policy advisor to the State of California]. See also Kok, Nils, Paavo Monkkonen and John M. Quigley (2014) "Land Use Regulations and the Value of Land and Housing: An Intra-Metropolitan Analysis." Journal of Urban Economics 81(3): 136-148. In

that article, the authors find that cities requiring a greater number of discretionary reviews and approvals to obtain a building permit or a zone change have higher land prices, even after controlling for locational, geographic, and demographic characteristics. (*Id*. at p. 144, 146.)

Urgency Ordinance No. 592 controls any other City plan or ordinance in the event of a conflict, with its interpretation to be afforded the fullest possible weight to the interest, approval, and provision of housing (Appendix R). Certification as an Essential Housing Project is available for use to expedite (1) any new application for a Housing Development Project, (2) any Housing Development Project currently under City review, or (3) any approved, entitled, and/or permitted Housing Development Project not yet built by the date application for certification is made.

The City found Urgency Ordinance No. 592 to be CEQA-exempt because the Essential Housing Program only enacts a policy and procedure for ministerial review, and projects electing to proceed under the Program must individually comply with CEQA:

> The Council finds that this Ordinance is not subject to the requirements of CEQA because pursuant to Public Resources Code section 21080(a) and CEQA Guidelines section 15378(b)(2), the City's adoption of a general policy and procedure is not a "project" subject to CEQA. By this Ordinance, the City is hereby enacting the "Essential Housing Program" to provide policies and procedures to implement General Plan and zoning consistency for qualifying housing and mixed-use housing projects.
>
> In addition, this Ordinance is exempt under CEQA Guidelines section 15061(b)(3) because it can be seen with certainty there is no possibility that enacting this "Essential Housing Program" may have a significant effect on the environment. Specifically, by enacting these policies and procedures, the City is not causing any alteration to the physical environment; and any certified project that satisfies these policies and procedures must still comply fully the CEQA, the CEQA Guidelines, and all other applicable laws and regulations before any development of any kind can proceed. Thus, CEQA compliance is assured. Further, the City's enactment of these policies and procedures will enhance, rather than degrade, existing environmental conditions by ensuring that any certified project demonstrate compliance with stringent environmental standards.
>
> The City also finds that choosing the precise time for CEQA compliance involves a balancing of competing factors. For example, CEQA recognizes that CEQA compliance should occur as project scope, design, features, and other factors and yet late enough to provide meaningful non-speculative information for environmental assessment. Accordingly, the City finds that by adopting this Ordinance, the City is not restricting itself from considering any feasible or reasonable choice of alternatives or mitigation measures for a certified project before completion of its CEQA compliance, nor committing itself to any definite course of action concerning a certified project prior to its CEQA compliance.

> Further, nothing herein restricts the City from denying a certified project on CEQA or other objective grounds.

(Ord. No. 592, Section 3.)

Ordinance No. 592 took effect immediately upon adoption. The City filed a Notice of Exemption pursuant to CEQA on August 25, 2021. No one filed any timely legal action challenging the City's adoption of Ordinance 592.

The City's Essential Housing Program was posted to the City's website at https://www.cityofsanteeca.gov/services/development-services/planning-and-zoning-services/essential-housing-program. To date, three proposed projects have been certified as Essential Housing Projects under the Program:

- Fanita Ranch (2,949 to 3,008 units),
- Santee Town Center (100 units), and
- Mission Gorge Road Condominiums (96 units).

Together, the above proposed projects would provide a mix of 3,145-to-3,202 single-family and multi-family homes within Santee, which would significantly assist the City in responding to the statewide and local housing emergency.

Fanita Ranch Essential Housing Certification and General Plan Consistency Analysis

The proposed project elected to take advantage of the streamlining opportunities provided by the City's Essential Housing Program. The project applicant submitted an application for the proposed project under the Essential Housing Program in early December 2021. On December 27, 2021, the City's Director of Development Services certified the proposed project as an Essential Housing Project based on the criteria adopted by the City Council (Appendix R). On December 27, 2021, The City filed a Notice of Exemption pursuant to CEQA, related to the ministerial Essential Housing certification determination. The applicant is continuing to process the proposed project subject to Essential Housing Program application procedures and requirements, including the requirement to comply with CEQA prior to project approval.

As described in Section 4.10, Land Use and Planning, and Appendix R of the Recirculated Sections, the proposed project would exceed by more than double the stringent environmental and Santee General Plan consistency criteria established by the Essential Housing Program and set forth in the Essential Housing Project Credits Assessment Guide and Checklist.

Among other things, the proposed project would address the City's housing crisis by providing a mix of residential and nonresidential uses and a mix of housing types and sizes, including 866 medium density residential units, 1,203 low density residential units, 445 active adult residential units, and 435 residential units in the Village Center. The proposed project would contribute $2.6 million for affordable housing, implement mobility improvements, including bus stops,

rideshare/carshare parking, traffic calming, and contribute $5 million to relieve congestion on SR-52.

Further, open space would be conserved. In addition to preserving 1,650.4 acres in the Habitat Preserve, the proposed project would provide at least $300,000 in funding for the management of city-owned natural open space and plant at least 10 trees per acre of land to be developed. The proposed project would also conserve water by connecting to recycled or advanced treated water when the Padre Dam Municipal Water District's East County Advanced Water Purification project is completed.

Moreover, sustainability would be achieved by the proposed project's commitment that residential units would be all-electric. The project would also exceed Title 24 standards, implement heat pump technology, increase solar production, and expand ventilation systems. Appliances would be Energy Star rated, electric vehicle chargers would be provided in the Village Center, and solar panels would be installed on accessory buildings and car ports. These sustainability commitments reduce project energy use and reduce air quality and greenhouse gas emissions.

Wildfire safety would be ensured through implementation of fuel management zones greater than 100 feet and implementation of the Fire Protection Plan (FPP), among the many other measures set forth in the FPP and Wildland Fire Evacuation Plan (see Appendices P1 and P2).

Several miles of trails and sidewalks would be provided with the proposed project, and up to $300,000 would be provided to the City to fund additional improvements to trail facilities. The proposed project's extensive park and recreational facilities would exceed the Santee Municipal Code standards by at least 5 percent and provide for multi-purpose playing fields and public recreational facilities for Citywide use.

Certification of the proposed project based on the City's Essential Housing Project Credits Assessment Guide and Checklist demonstrates that the current development proposal for the project site addresses the City's immediate housing needs and furthers Santee General Plan objectives and policies. The City Council has weighed and balanced the competing interests in its General Plan and construed projects that meet the Credits Assessment Guide and Checklist, including Fanita Ranch, as General Plan compliant in light of the Plan's objectives, policies, general land uses, programs and purposes, and the urgent need for housing. Therefore, the proposed project is deemed Santee General Plan consistent and does not require an amendment to the General Plan or other legislative act for approval. (Ordinance No. 592, Section 4 (D)(1).) Accordingly, the proposed project discretionary approvals being sought for the proposed project consist of EIR certification and approval of a Vesting Tentative Map, Development Review Permit, and Conditional Use Permits. (Recirculated Sections, Chapter 3, Project Description.)

In addition to demonstrating consistency with the General Plan through compliance with City's Essential Housing Project Credits Assessment Guide and Checklist, Section 4.10, Land Use and Planning, of the Recirculated Sections discusses the proposed project's consistency with the General Plan Housing Element, the Planned Development (PD) land use designation, the "Guiding Principles" for development on the Fanita Ranch site, and overall consistency with other General Plan goals, objectives, and policies.

Fanita Ranch is identified throughout the Housing Element as serving, and assisting to meet, the City's housing needs. In the Housing Element's "Credits Towards the RHNA" section, including at Table 34, RHNA Credits and Remaining Need, and Table 36: Fanita Ranch Land Use Summary, the Housing Element identifies Fanita Ranch as providing for at least 2,949 housing units, including 435 moderate and 2,514 above-moderate income housing units (up to 3,008 housing units if developed without a school). (City of Santee 2022a.) Consistent with the Housing Element, the proposed project would satisfy the City's moderate and above and above-moderate housing need.

Proposed project consistency with the Planned Development (PD) land use designation and "Guiding Principles" for the project site is described in Section 4.10.5.2 of the Recirculated Sections. As detailed further therein, the PD designation provides for "[m]ixed-use development potential including employment parks, commercial, recreational, and various densities of residential development pursuant to a development plan and entitlements being approved by the City Council." The PD designation encourages "innovative and very high quality development" to occur "in a manner which may not be possible under standard land use designations and their corresponding zones." The proposed project provides for mixed-use development of employment, commercial, recreational, and various residential densities consistent with this framework. The proposed Fanita Ranch Development Plan establishes a program for the comprehensive implementation of the project, including development guidelines and standards, which are imposed through a Development Review Permit process, to ensure that high-quality development standards are met.

The Guiding Principles for the project site are described in Section 4.10.2.1. Section 4.10.5.2 explains that the proposed project would implement development consistent with the Guiding Principles for the project site:

> The proposed project would include business and office uses in the Village Center and include a community focus including public parks, commercial, school, a fire station, and other uses. The proposed project would provide a range of residential densities, including Low Density Residential, Medium Density Residential, and Active Adult. The proposed project would be developed sensitive to natural open space and major landforms: 1,650.4 acres of the site would be preserved as Habitat Preserve. The Habitat Preserve would include hillsides with steep slopes to minimize landslide and mudslide hazards and to protect key visual resources.
>
> The proposed project would provide approximately 78 acres of public parklands for active and passive recreation (including sports fields and parks) and private parklands and 4.5 acres of trail lands consisting of perimeter trails and the Stowe Trail connections planned on the project site, totaling 82.5 acres. Mini-Parks, Neighborhood Parks, a Village Green, Linear Parks, and Community Parks would be included.
>
> The proposed Fanita Ranch Development Plan contains a comprehensive pedestrian and bicycle trail system that provides connectivity within and between

the villages and with the adjacent regional trails and local trails that connect to surrounding open space areas, residential neighborhoods, parks, and the Santee Town Center to the south. Multi-purpose trails would be within the street rights-of-way along Fanita Parkway and Cuyamaca Street, which would support pedestrian and bicycle travel. The multi-purpose trail along Cuyamaca Street would extend south off site to connect to the Santee Town Center and the San Diego River as part of the north–south regional corridor. Trail access in the Habitat Preserve would be subject to the requirements and provisions of the Public Access Plan (provided in Appendix D, Biological Resources Technical Report, of this EIR) and the City's Draft MSCP Subarea Plan.

The project includes an extension of Fanita Parkway along the western boundary of the property, an extension of Cuyamaca Street into the site, the Magnolia Avenue extension, and additional circulation improvements. The Fanita Ranch Development Plan includes a comprehensive implementation chapter (Chapter 10) identifying public improvements, phasing, financing, and other plans according to projected need. The site will not be subdivided until the Fanita Ranch Development Plan is adopted by the City. Chapters 4 and 6 of the Fanita Ranch Development Plan also include illustrative plans showing prototype circulation systems and residential product types. The proposed project does not include a golf course or lake, meet minimum lot size requirements, provide a dedicated Sports Park accessed by Carlton Hills Boulevard, or include a Development Agreement. Overall, the project is generally consistent with the 16 Guiding Principles.

Finally, Table 4.10-1, Project Consistency with Relevant City of Santee Goals, Objectives and Policies, of the Recirculated Sections demonstrates that the proposed project is consistent with the numerous other applicable goals, objectives, and policies of the General Plan. Please refer to Table 4.10-1 for further information.

Conclusion

In summary, by adopted Ordinance No. 592, the City appropriately took urgent action to address a local housing undersupply crisis to streamline local review of housing projects while ensuring CEQA compliance. Further, substantial evidence in the Recirculated Sections of the Final Revised EIR and in the administrative record support the City's determination that the proposed project is consistent with the Santee General Plan.

THEMATIC RESPONSE 4 – FIRE AND EVACUATION

4a. Evacuation Planning

Comments questioned whether the proposed project can be safely evacuated, what impacts the proposed project would have on local and regional evacuations, how evacuations would occur, estimated timing for evacuation of the proposed project's residents, and whether the provided evacuation plan was adequate. The following thematic response addresses evacuation planning and implementation in the City of Santee and San Diego County and addresses the purpose and content of a project-specific evacuation plan. This response does not address all evacuation related details, and the reader is encouraged to review responses to specific comments as well at the Recirculated Sections of the Final Revised EIR, including section 4.18: Wildfire, and the proposed project-specific Wildland Fire Evacuation Plan (Appendix P2).

Evacuation Planning and Implementation in Santee and San Diego County The proposed project-specific Wildland Fire Evacuation Plan was prepared based on the Unified San Diego County Emergency Services Organization and County of San Diego Operational Area (OA) Emergency Operations Plan (EOP)[1] – Evacuation Annex. Law enforcement and fire agencies charged with managing evacuations likely would not refer to a project-specific evacuation plan when implementing an emergency evacuation. These agencies follow internal pre-wildfire plans, and utilize experience, situational awareness, and available resources to move people from areas of higher, to areas of lower, potential risk.

Evacuation Planning Begins with the County Office of Emergency Services (OES). To establish a framework for implementing well-coordinated evacuations, the County of San Diego OES developed an Evacuation Annex as part of the area EOP (County of San Diego 2014 – see footnote 1). Most cities, including Santee, have adopted local plans that incorporate all or a majority of the County's plan. Large-scale evacuations are complex, multijurisdictional efforts that require coordination between many agencies and organizations. Emergency services and other public safety organizations play key roles in ensuring that an evacuation is effective, efficient, and safe.

Evacuation during a wildfire is not necessarily directed by the fire agency, except in specific areas where fire personnel may enact evacuations on scene. The San Diego County Sheriff's Department (SDCSD), California Highway Patrol (CHP), and other cooperating law enforcement agencies have primary responsibility for evacuations. These agencies work closely within the unified Incident Command (IC) system, with the County OES, and responding fire department personnel who assess fire behavior and spread, which should ultimately guide evacuation decisions. To that end, Santee Fire Department (SFD), law enforcement agencies, Public Works, Planning, Emergency Services Departments, and California Department of Transportation (Caltrans), among others, have worked with a County pre-fire mitigation task force to address wildland fire evacuation planning for the County.

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[1] https://www.sandiegocounty.gov/content/dam/sdc/oes/emergency_management/plans/op-area-plan/2018/ 2018-Annex-Q-Evacuation.pdf

If the emergency only impacts a local jurisdiction, the decision to evacuate would be made at the local jurisdiction level with regional collaboration considerations. SDCSD would manage evacuations in Santee. Based on the information gathered, local jurisdictions would generally make the determination on whether to evacuate communities as the need arises, on a case-by-case scenario basis. Technological advancements in emergency notification capabilities has resulted in the ability of emergency managers to evacuate targeted areas in contrast to the mass evacuations that occurred during 2003 and 2007 wildfires in the region. Targeted evacuations allow better management of traffic congestion and focus on evacuating populations on a threat-level priority basis. "Ready, Set, Go!" is a program that has been widely adopted for preparing residents to respond quickly to evacuation orders. The robust emergency notification system available to help manage evacuations, combined with the "Ready, Set, Go!" program, can prepare residents to be ready, which entails gathering necessities and preparing for an eventual evacuation by getting set to leave or to temporarily refuge in their residence. Residents are then ready to enact an evacuation quickly once they are told to leave. There have been comments submitted that the "Ready, Set, Go!" program has been denounced by San Diego County Fire Authority and Cal Fire, which is not accurate. The program provides for an aware and ready populace, which results in higher success probabilities than with an unprepared populace, whether a phased evacuation occurs or a temporary on-site refuge is implemented.

Evacuation Scenarios Vary and Often Change in Response to the Fire. Every evacuation scenario includes unique challenges, constraints, and fluid conditions that require interpretation, fast decision-making, and alternatives. For example, given a distant wildfire driven by Santa Ana winds, emergency managers may have several hours or more to evacuate communities like the proposed project with less urgency and the ability to spread traffic surges out over a longer time frame. In a scenario where a wildfire ignites closer, less time is available and a more strategic approach may be necessary. Optionality is important in case unforeseen issues arise that require short-term or long-term changes to the evacuation process. In general, risk is considered highest when evacuees are evacuating late and fire encroachment is imminent. The proposed project provides protected evacuation corridors along with the option of contingency on-site temporary refuge in designated buildings/areas to address this scenario.

Evacuation and Early Warning Systems. As demonstrated during large and localized evacuations occurring throughout the County over the last 20 years, an important component to successful evacuation is early assessment of the situation and early notification via managed evacuation declarations. San Diego County utilizes early warning and informational programs to help with these important factors. The University of California San Diego has developed a robust wildfire movement prediction program, there are numerous back country web cameras and fire detection networks, and weather tracking has become very sophisticated. For example, the weather system developed by San Diego Gas & Electric (SDG&E) is considered to be one of the most robust systems in the country. This system enables the detection of changing weather that may favor wildfire ignition and spread and can predict these changes with 24 to 72 hours' notice, allowing time to prepare and deploy fire response resources and provide resident warnings. Similarly, there are numerous fire detection assets positioned in the County's open space areas, resulting in more time availability for the evacuation process to begin while a wildfire is still in its early stages. Among the methods available to citizens for emergency information are Reverse 911/Alert San

Diego,[2] radio, television, social media/internet, neighborhood patrol car, and Aerial Support to Regional Enforcement Agencies helicopter (as available) and public address notifications.

The Project-Specific Evacuation Plan Is Consistent with the City and County EOP. The proposed project's Wildland Fire Evacuation Plan (Appendix P2) does not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed project-specific evacuation plan focuses on preparing the residents so they are familiar with direction they may be given during a wildfire emergency and does not conflict with any adopted evacuation plans. The Wildland Fire Evacuation Plan incorporates concepts and protocols practiced throughout the County. The San Diego County Evacuation Annex follows basic protocols set forth in the City of Santee's and the County of San Diego's Operation Area EOP and the California Master Mutual Aid Agreement, which dictate who is responsible for an evacuation effort and how regional resources will be requested and coordinated. In addition, the proposed project's Wildland Fire Evacuation Plan includes standards that can be integrated into a regional evacuation plan when and if the area officials and stakeholders (Santee Fire Department, County OES, California Department of Forestry and Fire Protection [CAL FIRE], SDCFA, OES, SDCSD, and others) complete one. The proposed project's Wildfire Evacuation Plan has been reviewed and accepted by the Santee Fire Department.

Law Enforcement Takes Lead on Evacuations. The SDCSD is the lead agency for evacuations of Santee, including the proposed project. The SDCSD, as part of a Unified Command, assesses and evaluates the need for evacuations, and orders evacuations according to established procedures. Additionally, the SDCSD identifies available and appropriate evacuation routes and coordinate evacuation traffic management with Caltrans, CHP, other supporting agencies, and jurisdictions. The following process describes how emergency evacuation decisions are coordinated, allowing emergency managers and other supporting response organizations to make collaborative decisions.

Law Enforcement, OES and Fire Agencies Determine Evacuation Routes. Evacuation routes are determined by 1) jointly prepared pre-wildfire plans (e.g., Rhode & Associates,[3] SDCFA, Cal Fire, and others) that indicate the likely fire scenario, and how traffic can be moved from an area, and 2) in real time using data reflecting fire location, movement, and projected path considering downstream traffic and most vulnerable populations. As indicated above, real-time evacuations in Santee are primarily managed by SDCSD, which relies on input and situational awareness provided by the Incident Command and supporting agencies. SDCSD coordinates with Caltrans and CHP for road management during evacuations. The pre-prepared evacuation plans, such as the proposed project's Wildland Fire Evacuation Plan, are guidance documents only and meant for resident preparedness. The City of Santee and San Diego County emergency service agencies have separately prepared regional wildfire response plans that guide emergency responses and evacuation procedures. Actual field conditions supersede prepared subdivision-specific evacuation plans, but these plans educate local residents about what to expect in an evacuation scenario.

Factors Affecting Evacuation Timing and Routes. The main factors affecting the timing and routing of evacuations are those related to the nature of the wildfire. For example, is the fire uncontrollable

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2 https://www.readysandiego.org/alertsandiego/.

3 http://www.rohdeassociates.net/wui-fire-plans.

and does it have the capability of affecting a wide area? How will its movement and projected path play into evacuation route decisions? A key component of evacuations is the weather. On non-windy days and days with higher humidity, it is far less likely for a vegetation ignition to burn out of control and therefore, evacuation notifications are not typical. Windy, low humidity days (Red Flag Warning days) are far more prone to result in vegetation ignition escape and spread, resulting in far more sensitive evacuation trigger thresholds.

Evacuation routes that are considered acceptable when a wildfire is distant may be considered unsafe when a wildfire is in closer proximity. Having alternative routes offers flexibility for decision makers and having the contingency option of being able to temporarily refuge citizens within fire hardened structures offers yet another option in an environment where optionality is extremely valuable. Changes in wildfire behavior and traffic flow do alter how evacuation orders are implemented. Evacuation orders are based on a great deal of input, contemplation, situational awareness, and pre-planning. Evacuations may be altered to focus on controlling downstream intersections so that a population that is at highest risk can be moved before other populations that are considered at lower risk are allowed passage. This occurs often during wildfires. As weather conditions change and influence wildfire movement, evacuation orders will also shift, typically including larger areas. San Diego County Fire and Law Enforcement Agencies and related partners have a robust ability to rationally predict wildfire movement. This is accomplished through pre- fire planning and fire behavior modeling, working with University of California San Diego's WIFIRE lab advanced wildfire behavior projection technology, and SDG&E's weather system network. More than $500 million has been invested to enhance the County's fire prevention, detection, response, suppression, and recovery capabilities since the 2003 Cedar Fire.[4] These efforts have proven effective in successfully managing wildfire events, such as was accomplished during the successfully managed 2017 Lilac Fire.

The project's interior street network and the existing regional street system that it connects with would provide multi-directional primary and secondary emergency evacuation routes consistent with, or exceeding, most communities in this area (Appendix P2, Wildland Fire Evacuation Plan). Further, the only proposed through routes on the project site would loop between Fanita Parkway and Cuyamaca Street on site and would not affect emergency response and evacuation plans elsewhere in Santee. Consistent with County Operational Area EOP – Evacuation Annex (County of San Diego 2018), major ground transportation corridors in the area would be used as primary evacuation routes during an evacuation effort. The street systems were evaluated to determine the best routes for fire response equipment and "probable" evacuation routes for relocating people to designated safety areas.

The primary roadways that would be used for evacuation from the project site are Fanita Parkway and Cuyamaca Street, the latter of which would connect to the proposed extension of Magnolia Avenue. Note that the Magnolia Avenue extension would be constructed by the certificate of occupancy for the 1,500th equivalent dwelling unit. The available evacuation routes prior to the Magnolia Avenue extension (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D, and the Santee Municipal Code and Ordinances for multiple access points; and, therefore, are considered adequate for emergency purposes for the interim

[4] https://www.sandiegocounty.gov/content/dam/sdc/sdcfa/documents/prevention/2019-Wildfire-update-5-6- 2019.pdf.

period until the certificate of occupancy of the 1,500th equivalent dwelling unit. These streets provide access to major traffic corridors, including directly or indirectly to State Route (SR-) 52 to the south, SR-67 to the east, Interstate (I-) 8 to the south, I-125 to the south, and I-15 to the west (Appendix P2). Refer to Figure 4.18-1 for a depiction of the Wildland Fire Evacuation Plan from the project site.

During an emergency evacuation from the project site, the primary and secondary roadways may serve as egress for those leaving the project site and as ingress for responding emergency vehicles. Because the roadways are designed to meet or exceed the County's Consolidated Fire Code requirements, including unobstructed travel lane widths consistent with the Fanita Ranch Development Plan standards, unobstructed travel lanes, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside FMZs, potential conflicts that could reduce the roadway efficiency are minimized, allowing for smooth evacuations. Additionally, the streets would provide residents the option to evacuate from at least two points in two different directions from each neighborhood.

Depending on the nature of the emergency requiring evacuation, the majority of the community traffic would exit the proposed project via Cuyamaca Street or Magnolia Avenue via Cuyamaca Street. These are the most direct routes for the project site. Fanita Parkway may be used by the western portion of the project site, depending on the time available for evacuation and the need for additional movement via the southerly route. In a typical evacuation that allows several hours or more time (as experienced for most areas during the 2003, 2007, 2014, 2016, and 2017 wildfires), all traffic may be directed to the south and out Cuyamaca Street and/or Magnolia Avenue. If less time is available, fire and law enforcement officials may direct some neighborhoods to temporarily shelter in their residences. For further information, please refer to the project's Wildland Fire Evacuation Plan (Appendix P2).

An evacuation of any area requires significant coordination among numerous public, private, and community/nonprofit organizations. Among the most important factors for successful evacuations in urban settings is control of intersections downstream of the evacuation area. If intersections are controlled by law enforcement, barricades, signal control, or other means, potential backups and slowed evacuations can be minimized. Another important aspect of successful evacuation is a managed and phased evacuation declaration. Evacuating in phases, based on vulnerability, location, or other factors, enables subsequent traffic surges on major roadways to be smoothed over a longer time frame and result in traffic levels that flow better than when mass evacuations include large evacuation areas at the same time (Appendix P2).

Fire Agencies and Law Enforcement Do Not Use Subdivision-Specific Evacuation Plans. Agencies involved in implementing an evacuation order would not rely on a project-specific evacuation plan. Individual residential subdivision evacuation plans prepared in the County have been prepared as a tool to help residents be aware of wildfire evacuations, their potential evacuation routes, and the fact that they may be directed to stay in their homes in lieu of evacuating. Further, Incident Commands and law enforcement are not bound by subdivision-specific evacuation plans. Instead, evacuation managers would rely on situation awareness that dictates decision-making and where possible, on wildfire pre- plans. The wildfire pre-plans are an operational tool provided to emergency responders that provide high-level fire environment, assets at risk, preferred evacuation

approaches, and other safety information to responding personnel to inform evacuation decision-making.

4b. Types of Evacuations and Evacuation Modeling

Phase Out of Mass Evacuations. Mass evacuation during wildfires is no longer used in Santee or San Diego County. Instead, populated areas are evacuated in phases based on proximity to the event and risk levels. For example, the project's wildfire evacuations would likely include the relocation of perimeter residents, either to on-site shelter sites or off site rather than mass evacuating the entire community (Appendix P1).

The wildfire evacuation scenarios selected for analysis were based on a comprehensive approach that included consultation with the SFD, review of fire history, analysis of Cedar Fire evacuations in Santee, fire behavior science, area topography, fuel types and the evolved approach to evacuations, which is targeted/surgical instead of areawide. Accordingly, given the highest probability wildfire scenarios that would result in evacuation, the perimeter populations in certain locations may be targeted for evacuation. The entire project would provide significant protection against exposure to wildfire. However, some perimeter units, based solely on their closer proximity to native fuels, may be selected for occupant relocation as a precautionary measure. This may be combined with targeted evacuations of perimeter populations within existing communities to the south of the project, as indicated in the evacuation modeling analysis (Appendix P2).

Targeted evacuation is consistent with County/City Annex Q (Evacuation) and with management of recent San Diego County wildfires (for example, the 2017 Lilac Fire) where the phased/surgical evacuation practice was implemented with success. The result of this type of evacuation is that residents in locations closest to a wildfire burning in open space areas are temporarily moved from the vicinity and vehicle congestion on evacuation routes is minimized, enabling a more efficient evacuation. Under the most probable evacuation scenario, the project evacuees, along with neighboring community residents could be evacuated to designated safety areas within 19 minutes (Appendix P2). If they were relocated to other internal project areas, the evacuation time would be even lower and have no impact on existing off-site communities, except for up to approximately 25 percent of evacuees who decided to leave the area despite not being asked to evacuate off site, known as shadow evacuees (Sorenson and Vogt 2006).

The evacuation modeling conducted for the project site and Santee vicinity utilizes larger, mass evacuation scenarios as well as more realistic, targeted or phased evacuation scenarios. San Diego County experienced large wildfires in 2003, 2007, and 2010. The experience gained from these large wildfire evacuations resulted in hundreds of millions of dollars in investment into better technology, communication, predictive modeling, coordination, and response resources. The County and jurisdictions within the County now benefit from all of these investments, and the most relevant to the project modeling is the investment in evacuation technologies. The 2007 Witch Fire resulted in a mass evacuation of nearly 500,000 people due to the approach used at that time (San Diego County Grand Jury 2007–2008). It was realized afterward that a more accurate system was needed that relied on real-time fire behavior information along with area pre-plans. San Diego County's EOP Evacuation Annex (Annex Q) specifically addresses new capabilities for phased evacuations.

Phased Evacuation. The purpose of a phased evacuation is to reduce congestion and transportation demand on designated evacuation routes by controlling access to evacuation routes in stages and sections. This strategy can also be used to prioritize the evacuation of certain communities in proximity to the immediate danger. A phased evacuation effort would need to be enforced by law enforcement agencies and coordinated with the Operational Area Emergency Operations Center and affected jurisdictions.

Evacuations in Santee and throughout San Diego County are now managed by a system that enables emergency managers to designate small areas in a surgical approach that can target neighborhoods, blocks, or streets for alert messaging. This system was utilized with success in the 2017 Lilac Fire in northern San Diego County. In this evacuation, a larger area of approximately 44,000 households, was given a message via the wireless emergency alert system that evacuations may be declared and residents should be prepared to leave when notified. Following this mass notification, numerous targeted evacuation notices were sent via the AlertSanDiego system, in a staggered approach and based on real-time fire behavior and spread rates, road congestion, and other factors. This phased approach to evacuation notices resulted in a successful evacuation and use of available resources (CAL FIRE/San Diego County Fire 2017).

Evacuation and shelter-in-place zones promote phased, zone-based evacuation targeted to the most vulnerable areas, which allows jurisdictions to prioritize evacuation orders to the most vulnerable zones first and limit the need to evacuate large areas not under the threat. The zones help:

- Jurisdictions to understand transportation network throughput and capacity, critical transportation and resource needs, estimated evacuation clearance times, and shelter demand.
- Planners to develop planning factors and assumptions to inform goals and objectives.
- Community members to understand protective actions to take during an emergency.
- Shelters to limit traffic congestion and select locations suitable for the evacuated population.

As shown in the Wildland Fire Evacuation Plan (Appendix P2), the project would provide two major routes for ingress and egress during an emergency (Fanita Parkway and Cuyamaca Street), would not cut off or modify existing evacuation routes, and provide numerous roadway improvements in the City that would improve evacuation over existing conditions (including the Magnolia Avenue extension). Further, internal roadways and off-site travel routes (Fanita Parkway, Cuyamaca Street, and the Magnolia Avenue extension) would be fuel-modified passageways, consisting of inflammable asphalt/hardscape with ignition-resistant irrigated landscaping with an additional minimum 50-foot buffer of modified fuel areas along both sides of the road. These fuel-modified passageways would improve evacuation safety and act as a further fire break in a wildfire event.

Modeling Evacuation Scenarios and Estimated Evacuation Timing. The Wildland Fire Evacuation Plan (Appendix P2) includes a technical memorandum prepared by Chen Ryan Associates ("CRA") to assess the time required for emergency evacuation under several scenarios, assuming a wind-driven fire that results in an evacuation affecting the project and surrounding community. The analysis methodology utilized is consistent with those provided in the County of San Diego – Operational Area Emergency Operations Plan – Annex Q Evacuation Plan. Annex Q provides the following equation for determining evacuation time:

Evacuation Time = (Evacuation Population / Average Vehicle Occupancy) / Roadway Capacity

To analyze the evacuation events, CRA conducted simulations using Vissim, a microscopic, multimodal traffic flow modeling software used to simulate different traffic conditions. In Vissim simulations, roadway capacity is accounted for and each vehicle in the traffic system is individually tracked through the model and comprehensive measures of effectiveness, such as average vehicle speed and queueing, are collected on every vehicle during each 0.1-second of the simulation. This software enables drivers' behaviors during an evacuation to be replicated. A total of 20 simulations were conducted to yield a reasonable sample size to determine the performance of the study area roadways and impacts during evacuation scenarios. To be conservative, CRA assumed a worst case scenario that all vehicles belonging to households in the study area would be used in the evacuation, instead of the necessary number of vehicles needed to evacuate the impacted population.

Modeling potential evacuation traffic impacts requires that numerous assumptions be made to address many variables that will impact a real-life evacuation scenario, including the number of existing vehicles in the community, the number of project vehicles that will need to evacuate, the roadway capacities and whether enhancements are provided (e.g., extra lanes, lane widening, signaling intersections), the total number of intersections and how they will be operating, the final destination, the targeted evacuation area, the total mobilization time, vegetation communities, weather and wind, fire spread rates, humidity, topography, risk to homes, locations of ignitions and new fire starts, lead time needed, etc. There are many hundreds or thousands of potential model scenarios, and every fire scenario poses variations that regularly change and are reassessed "realtime" during a wildfire. Agencies involved in implementing an evacuation order would not rely on a project-specific evacuation plan, but on situational awareness and wildfire pre-plans, which act as an operational tool to provide high-level fire assessments and assets at risk, preferred evacuation approaches, and safety information to inform evacuation decision-making. CRA assumed that the evacuation would occur at night when all residents and the surrounding communities are at home and thus all resident vehicles would need to evacuate. In an actual wildfire scenario, it is likely that fewer vehicles would likely be present on the Project site and within the surrounding communities when an evacuation order is given.

The wildfire evacuation scenarios selected for the analysis contained in the Wildland Fire Evacuation Plan were based on a comprehensive approach that included consultation with the Santee Fire Department, review of fire history, review of Cedar Fire evacuations in Santee, fire behavior science, area topography, fuel types and the evolved approach to evacuations which is surgical instead of area wide. Accordingly, given the highest probability wildfire scenarios that would result in evacuation, the perimeter populations in certain locations may be targeted for evacuation. The entire Fanita Ranch Project is provided wildfire hardening and will provide significant protection against exposure to wildfire. However, some perimeter units, based solely on their closer proximity to native fuels, may be selected for occupant relocation as a precautionary measure. This may be combined with targeted evacuations of perimeter populations within existing communities to the south of Fanita Ranch, as indicated in the modeling analysis. This type of evacuation is consistent with County/City Annex Q (Evacuation) and with management of recent

San Diego County wildfires (for example, the 2017 Lilac Fire) where the phased/surgical evacuation practice has been implemented with great success.

A total of nine evacuation scenarios were analyzed (Figures referenced below may be found in the CRA technical memorandum attached as Exhibit D to Wildland Fire Evacuation Plan, Appendix P2):

- Scenario 1 – Existing Land Uses: This scenario estimates the evacuation time for the existing land uses located within the City of Santee, north of Mast Boulevard. Figure 2 displays the area assumed to be evacuated under this scenario.
- Scenario 2 – Full Project without Magnolia Avenue Extension: This scenario assumes that all residents of the Project will evacuate via Fanita Parkway and Cuyamaca Street. Magnolia Avenue is not available as an evacuation route for the Project.
- Scenario 3 – Full Project with Magnolia Avenue Extension: This scenario assumes that all residents of the Project will evacuate via Fanita Parkway, Cuyamaca Street, and the Magnolia Avenue Extension.
- Scenario 4 – Most Probable Evacuation: This scenario was developed in coordination with the City of Santee Fire Department. The land uses evacuating under this scenario include a portion of the Project as well as a portion of the existing land uses. Evacuating land uses were selected based on their proximity to existing open spaces area. Figure 3A and Figure 3B display the area assumed to be evacuated under this scenario.
- Scenario 5 – Existing Land Uses with Targeted Evacuation (1/8-mile): This scenario estimates the evacuation time for the existing land uses located within the City of Santee, north of Mast Boulevard, and within 1/8-miles of an open space area. Figure 4A displays the area assumed to be evacuated under this scenario.
- Scenario 6 – Existing Land Uses Plus Project with Targeted Evacuation (1/8-mile) with Magnolia Avenue Extension: This scenario is identical to Scenario 4 with the addition of the Project land uses with the Magnolia Avenue Extension. Similar to Scenario 4, only Project land use located adjacent to open space area are evacuating. Figure 4B displays the area assumed to be evacuated under this scenario.
- Scenario 7 – Existing Land Uses with Targeted Evacuation (1/4-mile): This scenario estimates the evacuation time for the existing land uses located within the City of Santee, north of Mast Boulevard, and within a ¼-mile of an open space area. Figure 5A displays the area assumed to be evacuated under this scenario.
- Scenario 8 – Existing Land Uses Plus Project with Targeted Evacuation (1/4-mile) with Magnolia Avenue Extension: This scenario is identical to Scenario 6 with the addition of the Project land uses with the Magnolia Avenue Extension. Similar to Scenario 6, only Project land use located adjacent to open space area are evacuating. Figure 5B displays the area assumed to be evacuated under this scenario.

Scenario 9 – Existing Land Uses Plus Project with Magnolia Avenue Extension: This scenario is identical to Scenario 1 with the addition of the Project land uses with the Magnolia Avenue Extension.

Evacuation Time Summary – All Scenarios

Scenario	Total Evacuation Vehicles	Evacuation Time
Scenario 1 – Existing Land Uses	17,924	1 Hour 18 Minutes
Scenario 2 – Full Project without Magnolia Avenue Extension	7,042	1 Hour 32 Minutes
Scenario 3 – Full Project with Magnolia Avenue Extension		53 Minutes
Scenario 4 – Most Probable Evacuation	1,885	19 Minutes
Scenario 5 – Existing Land Use with Targeted Evacuation (1/8-mile)	10,706	1 Hour 9 Minutes
Scenario 6 – Existing Land Use Plus Project with Targeted Evacuation (1/8-mile) with Magnolia Avenue Extension	14,343	1 Hour 17 Minutes
Scenario 7 – Existing Land Use with Targeted Evacuation (1/4-mile)	11,391	1 Hour 11 Minutes
Scenario 8 – Existing Land Use Plus Project with Targeted Evacuation (1/4-mile) with Magnolia Avenue Extension	15,810	1 Hour 18 Minutes
Scenario 9 – Existing Land Uses Plus Project with Magnolia Avenue Extension	24,956	1 Hour 57 Minutes

Source: CR Associates (2022).

The evacuation time does not depict the evacuation time for each population modeled, but rather the time needed to evacuate all populations modeled. Populations located in closer proximity to the safe zone will safely evacuate sooner than the calculated evacuation time.

As shown in the table above, it would take 53 minutes to evacuate the proposed Project's population with completion of the Magnolia Avenue Extension (Scenario 3) compared to 1 hour and 32 minutes to evacuate the proposed Project without Magnolia Avenue Extension (Scenario 2). Thus, the Magnolia Avenue Extension would result in a 35-minute reduction in Project evacuation time.

It would take the existing land uses and the Project land uses located within the probable evacuation area (Scenario 4) 19 minutes to evacuate the area. Since the Project is located at the northern most end of the City of Santee and evacuated residents would travel south, traffic from existing neighborhoods would mostly have arrived at the safe zone by the time traffic from the proposed Project arrived at key intersections.

It would take existing land uses located within a 1/8 mile of open space 1 hour and 9 minutes to evacuate without the Project (Scenario 5). With the proposed Project, plus the Magnolia Extension, evacuating all project and existing land uses located within 1/8 mile of open space would take 1 hour and 17 minutes (Scenario 6), an increase of 8 minutes. Since the Project is located at the northernmost end of the City of Santee and evacuated residents would travel south, traffic from

existing neighborhoods would mostly have arrived at the safe zone by the time traffic from the proposed Project arrived at key intersections.

It would take existing land uses located within a 1/4 mile of open space 1 hour and 11 minutes to evacuate without the Project (Scenario 7). With the proposed Project, plus the Magnolia Extension, evacuating all project and existing land uses located within 1/4 mile of open space would take 1 hour and 18 minutes (Scenario 8), an increase of 7 minutes. Similar to Scenario 5, traffic from existing neighborhoods would mostly have arrived at the safe zone by the time traffic from the proposed Project arrived at key intersections.

A simultaneous mass evacuation of all residents of existing land uses without the Project would take 1 hour and 18 minutes (Scenario 9). Existing land uses plus the proposed Project with the Magnolia Avenue Extension would take 1 hour and 57 minutes to evacuate, an increase of 39 minutes. As shown above, traffic from existing neighborhoods would mostly have arrived at a safe space by the time traffic from the proposed Project arrived at key intersections.

First responders would account for evacuation timing to adjust the lead time given when issuing evacuation orders, to better phase evacuation orders, and to adjust evacuation traffic control methods (such as controlling downstream traffic lights or officers directing traffic) to ensure proposed project occupants and the surrounding community are able to safely evacuate in the primary evacuation scenario.

The proposed Project provides several features that would enhance orderly and safe evacuation, but which are not reflected in the average evacuation time results above. These features include evacuation preparedness, fuel modification along Project roadways, structural hardening of Fanita Ranch homes, the additional fire station located on the Project site, and temporary areas for safe refuge and "shelter-in-place" options. These evacuation enhancements would reduce the potential for evacuation friction or interruption; however, such enhancements cannot be well depicted by the traffic evacuation model.

Neither CEQA, nor the City has adopted numerical time standards for determining whether an evacuation timeframe is appropriate. Public safety, not time, is generally the guiding consideration for evaluating impacts related to emergency evacuation. The City considers a Project's impact on evacuation significant if the Project will significantly impair or physically interfere with implementation of an adopted emergency response or evacuation plan; or if the Project will expose people or structures to a significant risk of loss, injury, or death involving wildland fires.
The City of Santee has historically had an extremely high success rate for safely evacuating large numbers of people and doing so in a managed and strategic way using available technological innovations. Safely undertaking large-scale evacuations may take several hours or more and require moving people long distances to designated areas. Further, evacuations are fluid and timeframes may vary widely depending on numerous factors, including, among other things, the number of vehicles evacuating, the road capacity to accommodate those vehicles, residents' awareness and preparedness, evacuation messaging and direction, and on-site law enforcement control. Notwithstanding evacuation challenges and variables, the success rate in the City of Santee in safely managing both mass and targeted evacuations is nearly 100% safe evacuations based on research showing there were no fire-caused deaths during an evacuation. Technological

advancements and improved evacuation strategies learned from prior wildfire evacuation events have resulted in a system that is many times more capable of managing evacuations. With the technology in use today in the City, evacuations are more strategic and surgical than in the past, evacuating smaller areas at highest risk and phasing evacuation traffic so that it flows more evenly and minimizes the surges that may slow an evacuation. Mass evacuation scenarios where large populations are all directed to leave simultaneously, resulting in traffic delays, are thereby avoided, and those populations most at risk populations are able to safely evacuate.

Based on the evacuation simulations performed, evacuation traffic generated by the Project would not significantly increase the average evacuation travel time or result in unsafe evacuation timeframes. In a likely evacuation scenario, existing residents south of the Project site would be located downstream of Project traffic and be able to evacuate prior to Project traffic reaching the same locations. Evacuation flow would be able to be effectively managed. Future residents of the Project would also be able to safely evacuate using the Project's two separate major evacuation routes and, once off-site, the Magnolia Avenue Extension. Project roadways would include 50 foot fuel modification zones adjacent to open space to further ensure evacuation safety.

The Project would also provide emergency managers the alternative option of recommending residents temporarily seeking refuge on-site in fire-resistant buildings or within the wide, converted landscapes and hardscapes that would not readily facilitate wildfire spread. This would provide emergency managers with a safer alternative to risking a late evacuation. By contrast, the examples of Southern California evacuations that have included loss of life have been the result of residents who did not evacuate when directed, and then attempted a late evacuation with travel through long distances of exposed travel ways as wildfire was overtaking the area. These examples occurred in fire environments that were more aggressive and included less maintenance than would occur at the Project area.

The Project would not cut off or otherwise modify existing evacuation routes. It would, instead, implement certain roadway improvements that would improve evacuation. This information will be provided to emergency managers for use in pre-planning scenarios to better inform in the field decisions made pursuant to adopted Emergency Operations Plans. Emergency personnel who issue an evacuation order may take into account these time estimates in determining when and where to issue evacuation orders. In a real evacuation scenario, emergency managers may use alternative actions/options to further expedite evacuation. Such actions may include providing additional lead time in issuing evacuation orders, providing alternative signal control at downstream intersections, utilizing additional off-site routes or directing traffic to roadways with additional capacity, implementing contra-flow lanes, issuing "shelter-in-place" orders when determined to be safer than evacuation, or considering the possibility of a delayed evacuation where parts of the population could be directed to remain on-site until the fire burns out in the sparse fuels around the evacuation route. These options require "in the field" determinations of when evacuations are needed and how they are phased to maximize efficiency. Overall, safe evacuation of the Project and surrounding community is possible in all modeled scenarios.

Some commenters raised concerns about existing daily congestion on Santee streets, and how it might impact evacuation efforts, particularly with regard to vulnerable or immobile populations, such as the student population, campground/RV users, and seniors/disabled persons at an area

hospital. It is important to acknowledge that, unlike daily traffic and congestion experienced by motorists in non-emergency circumstances, evacuations are managed events that include intersection control, phased or surgical evacuation notices, and a priority to move populations that are at greatest risk. Therefore, typical traffic analysis or methodology used to determine acceptable levels of service ("LOS") are not appropriate to model evacuation timing. Rather, emergency managers are focused on moving populations that are at risk. Pre-planning for emergency evacuations is in place. For example, Santee area schools practice mandatory evacuations and maintain internal emergency plans. Such plan may include parent pick up, but may also include bussing students off-site if necessary or keeping children and staff on-site when it is a safer alternative to evacuation. Regarding the motorhomes/RV population, wildfire evacuations would consider the need to evacuate these areas, the time available. If these populations/areas are considered at risk, they would be evacuated with specific directions, intersection control, and available equipment to move a stalled RV if necessary. Lastly, regarding immobile populations, including those at Edgemoor Hospital, it is highly unlikely that the hospital would need to be evacuated given its location. However, assuming an evacuation was considered necessary, immobile populations would be evacuated via shuttle busses and similar vehicles with medical assistance on-board.

For these and the other reasons set forth in section 4.18; Wildfire of the Recirculated Sections, the Final Revised EIR reaches the conclusion that implementation of the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire. Nor would implementation of the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

4c. Fire Ignition and Risk

Some comments question whether the EIR includes sufficient evidence to support the conclusion that the proposed project's fire safety measures will not exacerbate existing wildfire risk to adjacent communities. These comments imply that the proposed project will increase the risk of fire ignition on the proposed project property, which is currently undeveloped. This thematic response addresses the concern that the proposed project would increase fire ignitions and related risk.

New Development in the Wildland-Urban Interface and Fire Ignition Risk Data Do Not Support Assumptions That New Development Increases Fire Ignition Risk. Some of the comments received suggested that placing a new residential project in Santee's wildland-urban interface (WUI) will increase the risk of fire ignition. The data, however, do not support that conclusion. According to the available evidence, no large fires in the County since 1990 were determined to have been started within a nearby master planned, ignition-resistant subdivision or neighborhood. Syphard and Keeley (2015 -–Location, timing and extent of wildfire vary by cause of ignition) summarized all wildfire ignitions included in the CAL FIRE and Resource Assessment Program database, dating back over 100 years. They found that in the County, equipment-caused fires were by far the most numerous, and these also accounted for most of the area burned; power line fires were a close second. Ignitions classified as equipment-caused frequently resulted from exhaust or sparks from power saws or other equipment with gas or electrical motors, such as lawn mowers, trimmers

or tractors. These ignition sources are typically associated with lower-density housing, not higher-density housing such as that contemplated by the proposed project where the large fuel modification zones (FMZs) would be maintained by professional contractors instead of individual homeowners. These same large FMZs would separate homeowner maintained areas from the unmaintained wildland areas, providing a buffer against accidental ignitions. It is noted that electrical transmission lines would be undergrounded within the proposed project. Further, SDG&E has become California's leader in fire safety among electric utilities, spearheading numerous new fire safety programs and investing heavily in fire preparedness, prevention, detection, response, and recovery. Additionally, SDG&E is considered the leading electrical utility in California regarding its fire prevention and fire safety practices. SDG&E has invested heavily in developing a robust weather monitoring system with fire detection capabilities, fire hardening of its system, and fire awareness and outreach.

Data Indicate That Lower-Density Housing Poses Greater Ignition Risk. In the County, ignitions were more likely to occur close to roads and structures, and at intermediate structure densities. This is likely because lower-density housing creates a wildland-urban intermix rather than an interface. The intermix places housing among unmaintained fuels, whereas higher-density housing such as the proposed project converts all fuels within the footprint and provides a wide, managed fuel modification zone separating homes from unmaintained fuel. Syphard and Keeley (2015 – see footnote 1) determined that "the WUI, where housing density is low to intermediate, is an apparent influence in most ignition maps." This further enforces the notion that lower-density housing is a larger ignition issue than higher-density communities. Syphard and Keeley also state that "development of low-density, exurban housing may also lead to more homes being destroyed by fire" (Syphard et al. 2013). However, neither of these findings considers the fire hazard and risk reduction associated with homeowners association (HOA) managed FMZs and ignition-resistant structures. In addition, the study found that frequent fires and lower-density housing growth may lead to the expansion of highly flammable exotic grasses that can further increase the probability of ignitions (Keeley et al. 2012). This is not the case with the proposed project, where the landscapes would be managed and maintained to remove exotic fuels that may become established over time. The Fire Protection Plan (Appendix P1) plant palette restrictions, combined with HOA maintenance and twice yearly 3rd party review/inspections of FMZ would minimize the establishment and expansion of exotic plants, including grasses. Based on research of the relevant literature and extensive conversations with active and retired fire operations and prevention officers, there is credible evidence to suggest that new residential neighborhoods built to the requirements of the County's Fire and Building Codes increase the risk of wildfire ignition. Rather, the data indicate that roadways, electrical distribution lines, and lower-density residential projects (that do not have HOA enforced restrictions and annual inspections) are the primary causes of increased wildfire ignition. It is important to note that the proposed project would provide roadside fuel modification throughout the project area and on either side of all new roadways and that its electrical lines will be subterranean.

Importantly, the technical literature referenced in some comments and the latest research do not show a simple or direct correlation between new development in the WUI and increases in fire ignition or acres burned follows.

Syphard and Keeley, in a recent article, found that fire frequency in California increased through most of the twentieth century, peaking in 1980 but has since decreased steadily through 2016,

despite significant population growth and more development in the WUI (Keeley and Syphard, "Historical Patterns of Wildfire Ignition Sources in California Ecosystems," International Journal of Wildland Fire, 2018, Volume 27, pp. 781–799). Here are some of the article's key findings:

- "Particularly striking about California ignitions is the steady increase in the number of fires since the early 1900s until a peak c. 1980, followed by a marked drop in fire frequency up to 2016" (p. 793).
- "Factors that may have played a role in these historical patterns of ignitions and area burned are changes in: population density, infrastructure development, fire prevention success, fire-suppression effectiveness, vegetation-management practices, climate, and possibly record-keeping accuracy" (p. 794).
- "Not directly related to changing demography is the significant decline in fires in the last several decades – while population continued to grow after 1980, fire frequency was negatively related to population density. This is consistent with the pattern of fire activity peaking under intermediate population density" (p. 796).
- "Decreasing ignitions over the last 4 decades is potentially reflective of increasing efficiency of fire prevention. However, it also likely reflects changes in human infrastructure; new roads in this area were tied to development projects that required demonstration of adequate fire response capabilities" (p. 796).
- "In addition, an important factor behind declining ignitions is quite possibly the emergence of the California Fire Safe Council in the early 1990s, which made significant contributions to fire-safety education" (p.796).

Keeley and Syphard also found that since 1980, arson fires had decreased substantially, both in terms of number and area burned (p. 797). They noticed the same downward trend with respect to fires caused by smoking, children playing with fire, and motor vehicles. (p. 797.) The only ignition source that resisted this trend was electrical power lines; fires from this source continued to increase between 1980 and 2016. (p. 797.) According to the article, "although powerlines do not account for many fires, they often account for substantial area burned " (p. 797). With regard to the proposed project, however, power line ignitions are less of an issue, since all such lines will be subterranean. Note also that SDG&E has embarked on an aggressive program to fire-harden its transmission line infrastructure and initiate systems that will enable it to predict (or quickly detect) dangerous wind events and adjust grid- power accordingly. These and other measures are set forth in SDG&E's 2020 Wildfire Mitigation Plan: https://www.sdge.com/sites/default/files/regulatory/SDG%26E%202020%20Wildfire%20Mitigation%20Plan%2002-07-2020_0.pdf (Section 5, pages 37 through 182).

The findings set forth in "Historical Patterns of Wildfire Ignition Sources in California Ecosystems" indicate that the mere presence of new development in the WUI does not equate to increases in fire ignition or acres burned. Rather, the arrangement of the development within the landscape, as well as the fire-resistant features of the community and the homes themselves, will determine whether a given development will or will not add to the local or regional fire risk.

4d. Fire Protection and Safety

Comments submitted in response to the EIR expressed concerns or requested information regarding the proposed project's location within a very high fire hazard severity zone, the features

that would be provided to protect residents and structures, landscape and fuel modification zone definition, fire behavior modeling, access and road details, potential for increased ignitions, and related fire safety topics. This thematic response addresses commenters' issues regarding fire protection and safety at the project site, the defensibility of modern subdivisions, and temporary refuge strategies. This response does not address all fire protection, planning, design, monitoring and maintenance features and procedures that would be required of the proposed project. The reader is directed to responses to individual comments and the Final EIR, as well as the Fire Protection Plan (Appendix P1).

Fire Defensibility of Modern Residential Subdivisions. Not all fires can be avoided and residents throughout wildland-urban interface areas should therefore be prepared for wildfire. However, it is important to understand that potentially high fire hazard does not equate to high risk of structural loss if varying types of available and effective mitigation practices are employed to reduce such risk. Unprepared structures and residents within a low fire hazard area may be at higher risk than well prepared structures and residents in a high fire hazard area.

Modern Subdivisions and Master Planned Communities Are Easier to Defend Than Neighborhoods with Older Homes. San Diego County Fire Authority, Rancho Santa Fe Fire Protection District, and many other fire agencies (personal communications with Dudek and at Public Hearings between 2016 and 2019) have indicated that communities built to the standards required in Santee and the County in WUI or fire hazard severity zones, and maintained on an ongoing basis, enable them to allocate resources where they are needed most (i.e., in the older communities) while defending the newer communities with significantly fewer engines. Deploying fire fighters in new communities offers safe refuge due to the wide FMZs and ignition-resistant structures and landscapes. The requirements for ignition-resistant structures and landscapes that are maintained in ignition-resistant communities are designed to minimize impacts on residents, their property and fire agencies protecting them. These requirements have become part of the fire and building codes because they were found to be effective and important for protecting structures from ignition in post-fire assessments conducted by public agencies charged with fire protection. This is why newer communities are considered for contingency temporary refuge. Modern residential subdivisions in Santee are built to very strict requirements that have evolved over approximately 20 years to include a focus on ignition resistance. Following the 2003, 2007, and 2010 wildfires, assessment teams were formed to evaluate every home that was damaged or lost as well as, for the first time, homes that were saved. The resulting data, revealed that most homes lost were the result embers penetrating the attic or other openings, and that the buildings or homes lost were typically situated among heavy, unmaintained landscape fuels. Saved homes were strongly linked to newer, more resistant construction materials and methods such as ember-resistant vents, boxed eaves, and other methods described in the Fire Protection Plan (Appendix P1), as well as maintained fuel buffers. These fire protection features are effective, as evidenced by numerous newer master planned communities in Southern California that have been subjected to wildfire and performed well. Examples include Cielo in Rancho Santa Fe, 4S Ranch in San Diego, and others in Orange, Los Angeles, Ventura, and other counties. Older communities throughout California continue to be the largest contributors to fire-destroyed homes, as occurred in Paradise during the Camp Fire (2018). Further evidence can be found in the Institute for Business and Home Safety Mega Fires – The Case for Mitigation (2007) report which discusses findings from the 2007 Witch Creek Fire, and the National Institute of Standards and Technology publication NIST Technical Note 1796, A Case Study of a Community Affected by the Witch and Guejito Fires: Report No. 2 – Evaluating

the Effects of Hazard Mitigation Actions on Structure Ignitions. This study focused on a particular Rancho Bernardo community and findings associated with the 2007 Witch Creek Fire.

The following are various design features and measures the proposed project would employ to improve safety and reduce risk to life and property of its residents:

- Meets City of Santee Fire Code Amendments including enhanced ignition-resistant construction materials and methods
- Meets California State Fire Code
- Meets State Title 14 (Fire Safe Regulations, SRA)
- Meets Chapter 7A of the California Building Code building construction material requirements for WUI areas
- Customized FMZ – Irrigated buffer around project perimeter. Wider than required where considered needed
- Defensible space around each structure meeting code and including site-wide landscape vegetation restrictions
- Latest Ignition-Resistant Construction Materials – create fire hardened structures

    - Exterior walls of all structures and garages would be constructed with approved non-combustible (stucco, masonry, or approved cement fiber board) or ignition-resistant material from grade to underside of roof system. Wood shingle and shake wall covering would be prohibited. Any unenclosed under-floor areas would have the same protection as exterior walls. Per City Building Code, Chapter 7-A: Exterior wall coverings would extend from top of foundation to the underside of roof sheathing, and terminate at 2-inch nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure). The underside of any cantilevered or overhanging appendages and floor projections would maintain the ignition-resistant integrity of exterior walls, or projection would be enclosed to grade.
    - Eaves and soffits would meet the requirements of SFM 12-7A-3 or be protected by ignition-resistant materials or non-combustible construction on the exposed underside, per City Building Code.
    - There would be no use of paper-faced insulation or combustible installation in attics or other ventilated areas.
    - There would be no use of plastic, vinyl (with the exception of vinyl windows with metal reinforcement and welded corners), or light wood on the exterior.
    - All roofs would be a Class "A" listed and fire-rated roof assembly, installed per manufacturer's instructions, to approval of the City. Roofs would be made tight with no gaps or openings on ends or in valleys, or elsewhere between roof covering and decking, in order to prevent intrusion of flame and embers. Any openings on ends of roof tiles would be enclosed to prevent intrusion of burning debris. When provided, roof valley flashings would not be less than 0.019 inch (No. 26 gage galvanized sheet) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of 72 pound ASTM 3909 cap sheet running the full length of the valley.

- No vents in soffits, cornices, rakes, eaves, eave overhangs or between rafters at eaves or in other overhang areas. Gable end and dormer vents to be at least 10 feet from property line or provided alternative design resistant to ember penetration. Vents in allowed locations would be protected with wire mesh having no openings greater than 0.125 inch. Vent openings would not exceed 144 square inches. Vents would be designed to resist the intrusion of any burning embers or debris.
- Vents would not be placed on roofs unless they are approved for Class "A" roof assemblies (and contain an approved baffle system (such as Brandguard or O'Hagin vents) to stop intrusion of burning material) or are otherwise approved.
- Turbine vents would be prohibited.
- Exterior glazing in windows (and sliding glass doors, garage doors, or decorative or leaded glass in doors) would be dual pane with one tempered pane, or glass block or have a 20-minute fire rating. Glazing to comply with CBC Chapter 7-A.
- Any vinyl frames would have welded corners and metal reinforcement in the interlock area to maintain integrity of the frame certified to ANSI/AAMA/NWWDA 101/I.S 2 97 requirements.
- Skylights would be tempered glass.
- Rain gutters and downspouts would be non-combustible. They would be designed to prevent the accumulation of leaf litter or debris, which can ignite roof edges.
- Doors to conform to SFM standard 12-7A-1, or would be of approved non-combustible construction or would be solid core wood having stiles and rails not less than 1 3/8 inches thick or have a 20-minute fire rating. Doors would comply with City Building Code, Chapter 7-A. Garage doors would be solid core 1.75-inch-thick wood or metal, to comply with code.
- Decks and their surfaces, stair treads, landings, risers, porches, balconies would comply with language in City Building Code, Chapter 7-A and be ignition-resistant construction, heavy timber, exterior approved fire retardant wood, or approved non-combustible materials.
- Decks or overhangs projecting over vegetated slopes would not be permitted. Decks would be designed to resist failing due to the weight of a firefighter during fire conditions. There would be no plastic or vinyl decking or railings. The ends of decks would be enclosed with the same type of material as the remainder of the deck.
- There would be no combustible awnings, canopies, or similar combustible overhangs.
- No combustible fences would be allowed within 5 feet of structures on any lots. The first 5 feet from a structure would be non-combustible or meet the same fire resistive standards as walls.
- All chimneys and other vents on heating appliances using solid or liquid fuel, including outdoor fireplaces and permanent barbeques and grills, would have spark arrestors that comply with the City Fire Code. The code requires that openings would not exceed 1/4-inch. Arrestors would be visible from the ground.

  - Any liquid propane gas (LPG) tanks (except small barbecue and outdoor heater tanks), firewood, hay storage, storage sheds, barns, and other combustibles would be located at least 30 feet from structures, and, within the FMZ, 30 feet from flammable vegetation. There would be no flammable vegetation under or within 30 feet of LPG tanks, or tanks would be enclosed in an approved ignition-resistant enclosure with 10 feet clearance of flammable vegetation around it. In no case would a tank be closer than 10 feet from the structure (consultant recommendation). City Fire Code requires 10 feet of clearance of native vegetation, weeds, and brush from under and around LPG tanks.
  - Storage sheds, barns, and outbuildings would be constructed of approved non-combustible materials, including non-combustible Class A roofs and would be subject to the same restrictions as the main structure on lot.
  - Additionally, any of the above-listed structures (i.e., outbuildings, storage sheds, barns, separate unattached garages) that are 500 square feet or less in size and 10 or more feet from an adjacent structure would be not be required to include automatic fire sprinklers. Locations, and required FMZs, would be subject to approval of City Fire Marshal and the Building Official based on size of the structure.

- Emergency Response Preparedness – populace would be ready and aware
- Suppression and Protection Capabilities – New Fire Station on site would improve City fire protection capabilities
- Water Supply – would provide firefighting water throughout the site with supplemental pumps and backup power where needed
- Public Notification/Alerts – would actively pursue resident registration with Alert San Diego
- Evacuation Planning and "Ready, Set, Go!" – part of an aware and ready populace
- Fire Protection Plan (Appendix P1) has been accepted by the Santee Fire Department
- Underground proposed project electrical transmission lines would eliminate a leading ignition source for large wildfires
- Road infrastructure –roads would be built to Specific Plan standards and include two primary access routes with multiple interconnections south of the proposed project
- Defensible higher-density development would be provided versus development inter-mixed with habitat
- Community design would create large ignition-resistant landscape/fuel break. Enables law enforcement and fire personnel options and flexibility for firefighting and evacuation or temporary refuge

Fuel Modification Zones. In addition to ignition-resistant construction measures, including important ember-resistant vents to minimize the potential for structure fires from airborne embers, the proposed project has provided a customized fuel modification plan that includes code-exceeding design and wider areas where terrain would otherwise support more aggressive fire behavior.

The Role Fuel Management Zones (FMZs) Play in Fire Protection. Provisions for modified fuel areas of at least 100 feet separating wildland fuels from structures have reduced the number of

fuel-related structure losses by providing separation between structures and radiant heat generated by wildland fuels. FMZs of 100 feet in width that are correctly designed, installed, and maintained over time have been shown to provide effective defensible space. The project's FMZs have been customized dependent on the anticipated adjacent fire behavior to exceed this 100-foot standard. The project provides FMZs of a minimum of 115 feet and, in areas where the potential wildfire hazard was determined to be higher, the FMZs around the project have been extended to 165 feet wide. A 100-foot FMZ at the site perimeter adjacent to the existing neighborhood to the south would also be provided, monitored, and maintained as part of the project to further reduce fire risk to those older homes.

The FMZs are designed to minimize wildfire encroaching upon the community and minimize the likelihood that an ignition from the developed area spreads into the open space by separating the natural vegetation occurring outside the FMZs from the development. FMZs include reduced fuel densities, lack of fuel continuity, and a reduction in the receptiveness of the landscape to ignition and fire spread. Vegetation within the FMZs would be maintained as required by SFD and Development Plan. Irrigated zones provide a high plant/fuel moisture, making it more difficult to ignite (USFS 2015). Positioning the low plant density, irrigated zone directly adjacent to structures provides a significant buffer between a house or other landscape fire and native vegetation. This type of green barrier can have the same benefit of buffering preserved open space areas (and adjacent communities) from accidental on-site ignitions, while also providing positive ecological impacts by preventing/blocking surface fire and crown fires, serving as green ember catchers, and reducing overall erosion impacts (Wang et al. 2021).

The entire project site would represent a large fire break. Fires from off site would not have continuous fuels across the development footprint and, therefore, would be expected to burn around and/or over the developed landscape via spotting. Burning vegetation embers may land on project structures but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition-resistant materials and venting that would be used within the project, and the ongoing inspections and maintenance that would occur in the project's landscaped areas and FMZs. Fuel treatments and landscape design protect homes and also serve as a buffer for natural areas and surrounding communities. FMZs were originally implemented by CAL FIRE to protect natural resources from urban area ignition sources. Over the years, FMZs have become essential to setting urban areas back from wildland areas serving the dual purpose of protecting structures and people while buffering natural areas from urban ignitions, thus reducing the potential for urban fires to spread into wildland areas. Research shows reducing structural exposure to wildland vegetation through the implementation of defensible space practices can address a wide range of highly valued resources, including critical habitat, vegetation conditions, and watershed health (Scott et al. 2016.) As a result, master-planned communities can be hardened against fire and reduce off-site impacts to wildfire, including existing communities.

Research has indicated that the closer a fire is to a structure, the higher the level of heat exposure (Cohen 2000). However, studies indicate that given certain assumptions (e.g., 10 meters of low-fuel landscape, no open windows), wildfire does not spread to homes unless the fuel and heat requirements (of the home) are sufficient for ignition and continued combustion (Cohen 1995; Alexander 1998). Construction materials and methods can prevent or minimize ignitions. Similar case studies indicate that with nonflammable roofs and vegetation modification from 10–18 meters

(roughly 32–60 feet) in Southern California fires, 85–95 percent of the homes survived (Appendix P1; Foote and Gilless 1996).

These results support Cohen's (2000) findings that if a community's homes have a sufficiently low home ignitability (i.e., Santee Municipal Code, City Ordinance No. 570), the community can survive exposure to wildfire with minor fire impacts. This provides the option of addressing the wildland fire threat to structures at the residential location without excessive wildland fuel reduction, including within adjacent open space areas. Rather, focusing the effort in the landscapes nearest the project footprint would provide the best fire protection. Cohen's (1995) studies suggest, as a rule-of-thumb, larger flame lengths and widths require wider FMZs to reduce structure ignition. For example, valid structure ignition assessment modeling (SIAM) results indicate that a 20-foot-high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). By contrast, a 70-foot-high flame may require about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). This study utilized bare wood, which is far more combustible than the ignition-resistant exterior walls that would be used for the project.

Based on scientifically modeled fire behavior calculations for the site, flame lengths under the most extreme fire weather conditions within the natural open space areas to the north and east of the project could approach 66 feet in height. Under normal summer weather conditions, flame lengths could approach 19 to 28 feet in height along the southern and western edges of the project site, respectively. As such, FMZs along the southern edge and interior open space areas are typically 115 feet wide, whereas the project's FMZs on the northern and eastern edges in areas adjacent to the higher flame length producing native landscapes were extended to 165 feet in width. This results in fire buffers that are between 3 and 5 times the predicted longest flame lengths directly adjacent the fuel modification area under typical weather conditions and approximately 2 to 3 times as wide as predicted adjacent flame lengths under extreme weather conditions.
Based on the studies referenced above, the proposed FMZ distances would be sufficient to prevent structure ignitions at the project even under the most extreme fire weather conditions (Appendix P1).

In addition, internal roadways and off-site travel routes (Fanita Parkway, Cuyamaca Street, and the Magnolia Avenue extension) would be fuel-modified passageways. This means that proposed project access roads that traverse areas of natural vegetation would, in addition to consisting of inflammable asphalt/hardscape with ignition-resistant landscaping, provide a minimum of 50-foot buffer of modified fuel areas along both sides of the road. These 50-foot FMZ adjacent to roadways would further reduce ignitions from vehicle-related causes (catalytic converter, brake-related, tossed cigarette, etc.), provide a setback from wildland fuels, improve evacuation safety, and act as a further fire break in a wildfire event.

Fire Protection and Response Infrastructure. Fanita Ranch planned amenities improve fire response and fire safety. The proposed project includes various improvements and amenities that would improve fire response and fire safety. The Santee Fire Department has accepted Fire Protection Plan (Appendix P1). The fire protection approach and individual requirements that provide fire safety include the following:

- Site access would comply with the requirements of the 2019 or most recently adopted California Fire Code and City Ordinance No. 570. The proposed project's circulation system would consist of both public and private roads with each being built to the respective standards and maintained by a funded entity (public roads maintained by the City, private roads maintained by an HOA and/or CFD).

- At least two points of primary access for emergency response and evacuation would be provided into the Fanita Ranch community. All interior residential streets would be designed to accommodate a minimum of a 77,000 pound fire truck. SFD would participate in approval of street names.

On-Site Fire Station. Having a fully staffed fire station within a community with the ability to respond quickly to all emergencies, including fire ignitions, is a benefit that increases fire safety and reduces fire risk. It has been a common fire industry estimate that most vegetation fire ignitions, estimated at 90 percent (Environmental Information Center 2020) occur during normal weather (non-extreme fire weather) and these fires account for approximately 10 percent of the total land area burned. This indicates that vegetation fires under normal weather conditions are controllable and fast response to these fires helps control them at small sizes. The 10 percent of fires that occur during extreme fire weather account for 90 percent of the burned area. These fires can quickly surpass efforts to control them and the need for a fast response to these types of vegetation fires is considerable if there is any likelihood of controlling/extinguishing them when they are small. The presence of an on-site station provides for fast response. Additional "eyes and ears" of residents in the project area heightens the likelihood of quick detection and reporting, enabling a fast response to ignitions. Structural fire ignitions are similar in that fast responses would reduce the fire's ability to spread from the room of origin and limit the overall ability of a structural fire to result in a structure loss, which would be the primary ember producing "fuel" within a new development. However, even though fast fire station response would be provided, a built-in protection that is designed to provide for safe egress from a house fire is the automatic fire sprinkler system. These systems have been shown to contain interior fires to the room of origin and literally begin the process of fire suppression before firefighters arrive. The on-site fire station would primarily respond to medical emergencies, which would result in fast medical assistance throughout the proposed project and to surrounding neighborhoods.

Water Service for Fire Suppression. Water is a key component to fighting wildfire and protecting structures. Providing water where it is not currently available, especially when it is provided in a protected environment like the ignition-resistant landscapes of a new master planned community, enables firefighters to protect homes and work to control a wildfire's advancement. New communities are required to provide fire hydrants meeting flow, volume and duration specifications at intervals designed to assist in fighting structural fires. These hydrants provide opportunities for wildland fire engines to stage, fill engine tanks, set up dip tanks for helicopter firefighting efforts, and sustain a fire fight. The proposed project's location offers a large area of converted landscape, a fuel break, which offers opportunities for fighting and controlling wildfires before they encroach upon existing neighborhoods. The proposed project changes fire behavior at the site due to the conversion of fuels to ignition-resistant landscapes and, combined with aerial fire retardant drops, extend outward to slow or stop a fire's advancement.

Temporary Refuge Defined. Temporary refuge is the practice of going or remaining indoors during or following an emergency event. This procedure is recommended if there is little time for the public to react to an incident and it is safer for the public to stay indoors for a short time rather than travel outdoors, but only when fire protection features are provided that result in ignition-resistant community structures and where defensibility is apparent. Temporary refuge, or sheltering-in-place also has many advantages because it can be implemented immediately, allowing people to remain in their familiar surroundings and providing individuals with everyday necessities such as telephone, radio, television, food, water, and clothing. However, the amount of time people can stay sheltered-in-place is dependent upon availability of food, water, medical care, utilities, and access to accurate and reliable information.
Temporary Refuge and Shelter-in-Place

The fire protection features that would be incorporated into the project make it a shelter-in-place-capable community. Wildfire would not be able to burn into the community due to perimeter FMZs and interior fire-resistant landscapes and hardscape, which would not readily facilitate fire ignitions or spread. Structures would be setback from unmaintained native fuels such that there would not be exposure to heat or flames. The structures would also include special vents that are ember resistant. Embers are the primary reason structures are lost in wildfires. Ember penetration into home attics or crawl spaces, for example, can ignite materials inside the home and go unnoticed for considerable periods of time until the structure is fully involved. Project structures would meet the most stringent ember-resistant requirements established in the California Building Code. Further, all structures would include interior fire sprinklers to provide an additional layer of protection should embers succeed in entering a structure.

Structures that are built to withstand the impact of wildfire are buildings that can be used for temporary shelter-in-place. Sheltering in place or taking temporary refuge when evacuation is considered undesirable is not a new idea. Sheltering in place has been a useful tool in the emergency management toolbox since the 1950s. In some wildfire scenarios, temporarily sheltering in a protected structure is safer than evacuating. Huntzinger (2010) states that: "If sheltering in place can provide the community with the same level of protection from an emergency incident as mass evacuation, this will be the recommended practice to use." By contrast, many civilian deaths have occurred when residents evacuated late and were exposed to wildfire on unprotected roadways (Braun 2002; CFA 2004).

Shelter-in-place may be implemented in a manner where residents are instructed to remain in their homes while firefighters perform their structure protection function; or it would allow for partial relocation, whereby residents in perimeter homes on the north/west/east edges or within certain individual neighborhoods on site are temporarily relocated to internal areas or to the Fanita Commons Village Center. These areas represent the most fire-protected areas of the site in the event future residents are instructed not to evacuate.

The evidence shows that if emergency managers determine shelter-in-place is preferred for the proposed project, project residents would not be exposed to a significant risk of loss, injury or death from a wildland fire. The fire-safe site would act as a fire break within more ignition-prone fuels. The project's property/structures would likely survive, providing an opportunity for residents to shelter-in-place. Safety would also be improved by the project providing a contingency

shelter-in-place option to late, unsafe evacuation practices. And the contingency for project residents to shelter-in-place may improve safety to off-site residences by freeing up fire resources elsewhere.

Fanita Ranch Land Plan Defensibility – Supporting Research. The proposed project's higher-density housing with highly maintained, irrigated vegetative fuel between or around homes and perimeter FMZs to keep an active flaming front at great distances from structures supports defensibility and appropriate hardening for the fire environment. These features make the proposed project substantially more resilient to fire than low to medium density projects where vegetation is allowed to grow between and among structures. This point is well- established in the scientific literature. For example, Alexandra D. Syphard, a fire expert who has studied fire conditions in the County, has consistently maintained that low to medium density developments that are interspersed or inter-mixed with wildland vegetation have the highest risk of fire-related damage. Below are references to some of the studies:

> Alexandra D. Syphard and Jon E. Keeley, "Why Are So Many Structures Burning in California," Fremontia, 2020, p. 30. ("Data show that fires tend to be most frequent at low to intermediate housing and population densities.")
>
> Alexandra D. Syphard, Teresa J. Brennan, and Jon E. Keeley, "The Importance of Building Construction Materials Relative to Other Factors Affecting Structure Survival During Wildfire," International Journal of Disaster Risk Reduction, Vo. 21 (2017), p 141. ("These [low to medium density] exurban housing developments are also located within complex terrain and may be more difficult to access by fire suppression crews; thus, low housing density has shown to be a major factor contributing to structure destruction in the [San Diego County] region.")
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> Alexandre, Patricia M., Susan I. Stewart, Miranda H. Mockrin, Nicholas S. Keuler, Alexandra D. Syphard, Avi Bar Massada, Murray K. Clayton, and Volker C. Radeloff, "The Relative Impact of Vegetation, Topography and Spatial Arrangement on Building Loss to Wildfires in Case Studies of California and Colorado," Landscape Ecol. 2016) Vo. 31, p. 416. ("The probability that a building is lost is highest in small, isolated building clusters with low to intermediate building density and few roads.")
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> Alexandra D. Syphard, Avi Bar Massada, Van Butsic, and Jon E. Keeley, "Land Use Planning and Wildfire: Development Policies Influence Future Probability of Housing Loss," PLoS ONE Vol 8, Issue 8 (2013), doi:10.1371/journal.pone.0071708.

Thus, the EIR and Fire Protection Plan (Appendix P1) accurately reflect Ms. Syphard's long-held position, which is that low-density development, when inter-mixed with wildland fuels, are at the highest risk of fire damage, while higher-density development, such as that contemplated in the proposed project fare much better. Higher-density communities tend to perform well because they are closer to roads and fire suppression services, and because they are designed to minimize fuel loads between structures. Such communities also tend to be newer and thus benefit from upgraded, ignition-resistant building materials.

The technical literature indicates that ignition-resistant construction materials and other fire-hardening measures significantly improve the ability of structures (and people) to survive wildfires. For example, in an article titled, "The Importance of Building Construction Materials Relative to Other Factors Affecting Structure Survival During Wildfire," International Journal of Disaster Risk Reduction, Vol. 21 (2017), pp. 143–144, Alexandra Syphard states that the results of her study "confirm the expectation that building construction and design play important roles in structure survival during large wind-driven fire events in San Diego County, CA." In this same article, Ms. Syphard recommends that owners of older homes retrofit them with modern fire-hardening components, such as double-paned windows (p. 145). Ms. Syphard then draws the following conclusion:

> "The data in our study show that newer buildings are more likely to be constructed using the materials and design that our data show to be empirically associated with structural survival. This is an encouraging sign for new construction in the region, and it helps to explain why structure age was one of the most important variables in the landscape analysis. Clearly, building ordinances adopted by [San Diego] County are effectively changing the design of new housing to become more fire resilient" (p. 146).

In this same article, Ms. Syphard explains why the County (and by extension Santee since it is consistent with County codes) is at the forefront of mandating fire-resistant housing materials.

The County has been enforcing fire codes for building construction in the WUI since 1997, when it adopted a requirement for Class "A" residential roof covering on new construction; which means that the roofing material must pass a relatively stringent series of fire tests. Adopted in 2001 and made a requirement in 2002, the first comprehensive WUI code in the County required, in addition to the above, dual glazed/tempered windows, residential fire sprinklers, rated exterior construction, fire-resistant decks and patios, no eave vents, no paper-backed insulation in attics, and 30 meter (100 feet) vegetation modifications around structures. The WUI fire code has undergone additional fire protection and ignition resistance revisions in 2004 and 2008 in response to the large fire events of 2003 and 2007. These regulations for fire-safe building construction are enforced through the issuance of building construction permits and approval of new subdivisions and thus they do not apply to older homes (p.141).

This passage indicates that the County is, and has been, at the forefront of requiring state of-the-art fire-resistant construction for new homes. It also illustrates that the County, in response to the Cedar and Harris Fires, has improved those fire safety requirements and made them even more robust and protective. The proposed project structures would be subject to these updated requirements. This was not the case with the majority of homes that were destroyed in the Cedar Fire (2003), the Harris Fire (2007), the Tubbs Fire (Santa Rosa 2017), and Camp Fire (Paradise 2018).

The proposed project is required to comply with Santee's stringent housing material requirements, as listed above in the quoted passage from Ms. Syphard's article. The EIR and Fire Protection Plan (Appendix P1, Section 6.4) include the comprehensive list of requirements. In addition, the homes at the project would have closed eaves, and the structures would be fitted with state-of-the art ember-resistant vents. This last element – the ember-resistant vents – is a newer product not found in the homes that were featured in Ms. Syphard's studies. They are critically important,

however, as they are designed to prevent the most dangerous source of structure ignition during wildfires – namely, embers penetrating the interior of homes.

It appears that the commenters did not take fire-resistant project features into account. References to homes lost in recent wildfire events in Northern California as well as past wildfires in the County did not include such features. Those homes were of an earlier vintage and did not have the benefit of modern fire-resistant construction or ongoing landscape fuel management that is inspected twice per year. Please refer to Thematic Response – Northern California Contrast. Thus, they reasonably cannot be compared to the proposed project's planned structures which must comply with the City's updated and stringent fire-hardening requirements. Moreover, the homes lost in mentioned fires were interspersed with vegetative fuel, something not permitted in modern developments such as the proposed project.

The proposed project is not like Paradise or other communities that were built before current fire standards. The proposed project would include a multi-layered fire protection system that is based on ignition-resistant buildings and landscapes, adherence to stringent codes, firefighting water availability, swift emergency response, and sound evacuation planning that includes a contingency option for residents who may be directed to temporarily shelter within the community during a wildfire evacuation. The proposed project, like other new, master planned communities, should not be compared with older, less restrictive communities that were not built to current codes and do not receive ongoing maintenance. Other new, nearby communities have performed extremely well during wildfires and given the proposed project's location, surrounding fire environment, and proposed fire protection plans, it is anticipated that the proposed project would represent lowered risk to both proposed project residents and nearby neighboring communities.

4e. Northern California Wildfires

Several comments referred to Northern California wildfires occurring between 2016 and 2018 as examples of the types of wildfires and damage that would occur at the project site. These comments generically claim that wildfire would behave similarly and that many structures would be lost and wildfires would result in chaotic and uncontrollable evacuations. The following thematic response addresses some of the significant differences between the Northern California and proposed project fire environments.

Camp Fire and Paradise Comparison. The Camp Fire in Paradise, California, is considered one of the most devastating wildfires in California's long history of wildfires. However, the town of Paradise contrasts starkly with newer development in Santee. Most structures in Paradise were built pre-1970, long before ignition- resistant construction materials and methods were required by the California Fire Code. Newer communities in Santee and specifically the proposed project would be built to ignition-resistant standards designed to protect structures from wildfire (Thematic Response – Fire Protection and Safety). Most of the homes and buildings in Paradise included wood siding, wood roofs, vent openings, and lack of managed/maintained fuel modification zones. Santee and the County's newer communities include a system of protection that includes protected exteriors, Class A roofs, protected vent openings, and managed and maintained fuel modification zones, along with interior protection through fire sprinkler requirements.

Paradise is situated in a dense conifer forest that grows in and throughout many of the town's communities, providing fuel to facilitate fire spread within the community. The City of Santee's and the County's new communities are situated in areas of mainly coastal sage scrub or chaparral habitat that is removed from the site and setback from the structures by perimeter fuel modification. Wildfire would not have fuels to facilitate its spread within the proposed project site, and perimeter defensible space would be customized to keep flames and heat away from homes. Many Paradise homes were lost to ember penetration. The proposed project's new homes would be protected by ember-resistant vent openings. Paradise was not practiced and prepared like the County emergency management agencies are for large fire events, and emergency notifications were not successfully executed well before fire approached. The County agencies have successfully evacuated large numbers of people (e.g., 400,000 people in the Cedar Fire and 150,000 in the Witch Fire) and has utilized situational awareness and notification technology for successfully evacuating areas and moving people out of harm's way. Paradise had no contingency plan if an evacuation was considered unsafe. Some people who realized they would not have enough time to evacuate sought protection in hardened public structures or in open park areas and survived. The proposed project, because of the fire protection features and planning, offers emergency managers with more flexibility and a contingency to an unsafe evacuation via temporarily sheltering residents in their homes or other designated on-site spaces, which are planned, designed, and maintained to function as temporary shelters when needed.

The ecology, botany, and general landscapes in and around Paradise are very different than in Santee, specifically at the proposed project site and its surroundings. In general, the Northern California Sierra Nevada foothills are dominated by large, mature conifer forests. Santee on the other hand is largely dominated by a combination of coastal sage scrub, chaparral and non-native species. The native landscapes have both significantly changed over time from their historic conditions, which has had an influence on the types of fires that could occur in both locales. This is important to understand because as a result of the management approaches like fire exclusion in Northern California forests, the pine forests around Paradise have become denser than their historical open, park like densities and now include understory fuels that increase the wildfire risk substantially. Fire exclusion has caused the forests to miss many successive intervals of the normally low-intensity fire. In the absence of these small, mostly benign surface fires, the vegetation there grew to provide greatly increased surface fuel loading as well as increased vertical continuity of shade-tolerant trees into the canopy of the larger dominant trees, resulting in ground fuel, ladder fuels, and dense canopy fuels, traits which foster high-intensity crown fires, that when combined with high winds, result in a fast-moving wildfire as experienced in the 2018 Paradise Fire.

After project implementation, the landscape around the proposed project site would no longer consist of contiguous, fire-prone shrublands. While the fuels in the open space would have the potential to burn (especially under hot and dry Santa Ana wind conditions), the irrigated, maintained landscape around the proposed project development would retard the spread and intensity of wildfires as they burn in a reduced intensity, spotty manner. There would not be a uniform fire front as would be expected in an uninterrupted fuel bed. The perimeter FMZ would be designed to reduce available fuels in the outer extents, which reduces fire intensity and spread rates. The next FMZ zone, which would be irrigated, would further reduce fire intensity and spread rates as high moisture plants are difficult to ignite. The FMZ starves the fire of fuel which directly

impacts its ability to spread. The proposed project as a whole represents a large fuel break on the landscape.

It should be noted, however, that the greatest change to fuels in both locales is due to the building of homes and other structures in the landscape. The homes in Paradise were built before building codes considered wildfire; homes in the proposed project, however, would be built to meet, and in some cases exceed, the current, restrictive Santee Fire and Building Codes. Whereas Paradise's ecosystem has evolved to now foster high-intensity crown fires, the proposed project's ecosystem would be expected to actually impede the spread of wildfire due to the ignition-resistant landscape and structures associated with the proposed project.

Evacuation Planning and Preparedness. In both the 2017 Tubbs Fire in Santa Rosa and the 2018 Camp Fire in Paradise, residential notification was largely lacking. This was due to a myriad of factors including fires quickly burning down cell towers, residents cancelling their landline services, timing of fire spread at night when many residents turn off their phones to facilitate sleep, lack of phone registration via residents not understanding the need to "opt in," visitors who were unaware of the service, and others.

The City of Santee and San Diego County offers a robust emergency notification system. The system, operated by the Office of Emergency Services, is known as Alert San Diego, and is capable of notifying tens of thousands of phone numbers in a very short time frame of an impending emergency. The system has been successfully employed in recent wildfires. The system has the capacity to push out emergency notices to both land lines and cell phones. In both instances, residents must "opt in" to the program by registering individual phones. In addition, there are many local news sources including television, radio, public broadcast, and social media that are used to reach affected citizens. In some cases, emergency responders will go street by street or door by door to notify residents of an evacuation.

The proposed project, the SFD, and the County incorporate the "Ready, Set, Go!" evacuation protocol. Part of this protocol is understanding when fire threat is at its peak. Red Flag Warnings declared by the National Weather Service provide emergency responders and residents with a warning that they should be prepared to take action if a wildfire develops. The focus of the "Ready, Set, Go!" program is on public awareness and preparedness, especially for those living in the WUI areas. The program is designed to incorporate the local fire protection agency as part of the training and education process in order to insure that evacuation preparedness information is disseminated to those subject to the potential impact from a wildfire. The "Ready, Set, Go!" program is compatible with phased evacuations and the temporary on-site refuge contingency option. There are three components to the program:

"Ready" – Preparing for the Fire Threat. Take personal responsibility and prepare long before the threat of a wildfire so you and your home are ready when a wildfire occurs. Create defensible space by clearing brush away from your home as detailed in the Fire Protection Plan (Appendix P1). Use only fire-resistant landscaping and maintain the ignition resistance of your home. Assemble emergency supplies and belongings in a safe spot. Confirm you are registered for AlertSanDiego system. Make sure all residents residing within the home understand the plan, procedures and escape routes.

"Set" – Situational Awareness When a Fire Starts. If a wildfire occurs and there is potential for it to threaten your home, pack your vehicle with your emergency items. Stay aware of the latest news from local media and your local fire department for updated information on the fire. If you are uncomfortable, leave the area.

"Go!" – Leave Early. Following your action plan provides you with knowledge of the situation and how you will approach evacuation. Leaving early, well before a wildfire is threatening your community, provides you with the least delay and results in a situation where, if a majority of neighbors also leave early, firefighters are now able to better maneuver, protect and defend structures, evacuate other residents who could not leave early, and focus on citizen safety.

"Ready, Set, Go!" is predicated on the fact that being unprepared and attempting to flee an impending fire late (such as when the fire is physically close to your community) is dangerous and exacerbates an already confusing situation. The proposed project's Wildland Fire Evacuation Plan (Appendix P2) provides key information that can be integrated into the individual action plans, including the best available routes for them to use in the event of an emergency evacuation.

Because fires may ignite at any time of the day and may move rapidly under Santa Ana wind conditions, the proposed project would provide ongoing fire awareness training and resources to its residents. The goal is to create a fire aware community that understands the types of fire threats that may occur and what actions law enforcement or other officials may direct them to take.

Road Infrastructure. Road infrastructure to facilitate ingress of firefighting equipment and egress of residents would be significantly better in the newly developed proposed project than in communities impacted by the fires in Northern California. Emergency planners in Paradise planned for average conditions in which the community would be evacuated in phases; unfortunately, the extreme fire behavior led to simultaneous evacuation of all residents, which greatly inhibited traffic flow on limited egress paths. The County (including for the City of Santee) has successfully implemented phased evacuations using its advanced situational awareness tools and notification technology, most recently in the Lilac Fire in 2017. Although it is possible that a fire ignites close to the proposed project site with less time available to evacuate residents than the time needed for the fire to encroach upon the perimeter FMZ, the fire intensity and built-in protections provides emergency responders with the contingency option of ceasing evacuations and directing residents to temporarily shelter in their homes. The ongoing training and fire awareness programs at the proposed project are expected to result in homeowners understanding the capabilities of their homes and the community.

Per the proposed project's Wildland Fire Evacuation Plan (Appendix P2), ingress/egress would include primary and secondary evacuation routes. Unlike the road network developed long ago in Paradise, the proposed project roads would be built to current standards, which calls for specific specifications for the following:

- Road width
- Grade
- Turning radii
- Maximum dead end road lengths
- Secondary access

Further, roadside vegetation clearance would be created and maintained, which would provide an additional buffer and hardening of the evacuation routes.

Evacuation Procedures and Capabilities. The evacuation procedures and pre-planning in Santee and throughout the County are extensive and the practiced experience of County agencies is to a higher standard than that in Paradise. Indeed, previous wildfires in the County that caused large-scale evacuations have led to many "lessons learned" over the years, which have prepared first responders for significant fire events. Whereas Paradise planned for a smaller fire event during average weather conditions (which would enable a phased evacuation), the proposed project recognizes that fires would likely burn under Santa Ana wind conditions and have planned accordingly.

The proposed project would follow the "Ready, Set, Go!" approach to evacuation, where residents are expected to leave well before any wildfire might arrive into the community. That said, unforeseen conditions (and normal human nature of delaying evacuation to "see just how bad it's going to get") could potentially preclude safe evacuation of some residents. However, the very nature of the home construction and landscaping in the proposed project enables residents to passively shelter in their homes as a last resort. While certainly not the first choice to advance life/safety, it provides residents with a safer alternative than attempting to evacuate during a wildfire's immediate passage.

Other communities in San Diego have successfully implemented this approach. For example, multiple residents who lived in "shelter in place" subdivisions in Rancho Santa Fe safely stayed in their homes during the 2007 Witch Creek Fire after evacuation was precluded. Most stated that while staying in their home was not their preferred option, it was much safer than evacuating as the fire burned through the area.

Wildfire Hazard v. Wildfire Risk. Although the proposed project is located in a very high fire hazard severity zone (VHFHSZ), it would have a significantly lower potential of actual loss than other older communities (such as Paradise) that are also located in a VHFHSZ. This is based upon the distinction between HAZARD (which the state categorizes) and RISK (which the state does not quantify). HAZARD is the potential fire behavior (i.e., flame length, crown fire occurrence, capacity to generate embers) in the predicted mature vegetation of the area. RISK, however, is the potential for structural loss from said fire. Thus, even if there is a potential low fire hazard in a given area (expected low flame lengths), a home might still be at high risk of ignition if the physical characteristics of the property would facilitate structural ignition (e.g., flammable vegetation next to a home with wood siding).

Conversely (and more applicable to the proposed project), a home might be in a high-risk hazard area (potential exposure to high flame lengths and ember generation), but may actually be at low risk of ignition if the structure is built with ignition-resistant construction materials and adequate defensible space is provided around the home.

This is especially true in planned communities where fuel modification can be provided over large areas and includes a perimeter FMZ. Recent research indicates that scenarios with lower housing density, large lots (ranchettes) and larger numbers of small, isolated clusters of development resulted in higher predicted fire risk. By way of comparison to the low-density General Plan land

use patterns, the proposed project land use density would not only be safer for the residents within the proposed project, but the proposed project itself would act as a large irrigated fire break that would be expected to impede fire spread by inhibiting large-scale wildland fires from spreading across the project site and into existing nearby Santee neighborhoods.

In contrast, unlike the proposed project and surrounding areas, the landscape-level vegetation in and around the Paradise area, consisted primarily of (1) mature mixed-conifer forests with a high degree of both horizontal and vertical continuity, and (2) high loads of contiguous grasses in areas that were burned a decade ago. These fuel types facilitated rapid fire spread and intensity in the wildland areas that surrounded Paradise, and also caused an enormous storm of embers to be cast onto individual parcels. While some of the surrounding areas near Paradise were burned in a fire in 2008, the high grass levels (fostered by late spring rains) were continuous and facilitated rapid spread into the community.

Although Paradise had nearly identical defensible space regulations as the proposed project (minus restricted plants), local authorities there did not seem to regularly enforce these regulations, which is unfortunately common in areas that do not have a funded HOA and in areas where the fire agency does not have the capacity to enforce defensible space regulations. The high degree of near-structure vegetation in Paradise, which was prevalent throughout the community before the 2018 Camp Fire, would have readily ignited the adjacent structures once they started burning.

All that said, the most granular level of fuels to consider (the homes themselves) served as the most important fuel that led to the mass devastation in Paradise. Indeed, throughout that community, home after home was destroyed, but the adjacent vegetation was left largely untouched. This phenomenon has been observable in multiple large, destructive fires, including the 2007 Witch Creek Fire in the County, the 2009 Black Saturday Fires in Victoria, Australia, the 2017 Tubbs Fire in Santa Rosa, and the 2018 Woolsey Fire in Los Angeles County. In all cases, mass destruction in many parts of the fire boundary was largely related to homes igniting via an ember storm, which burned many homes from the inside out following embers entering the structure via vents, windows, and under doors. The proposed project's structures are designed to withstand ember storms by providing tightly built structures with no unprotected openings and ember-resistant vents that prevent ember intrusion.

Topography. The topography in the proposed project also significantly varies from that in Paradise. Elevations in the proposed project range from 417 feet to 1,215 feet and occur in generally rolling hills, which sometimes includes small canyons that contain native fuels that are directionally aligned with the normal direction of Santa Ana winds. While this should be of some concern and receive attention, dead and dying vegetation would be removed in these areas and these sites would be maintained to reduce ladder fuels.

While the community of Paradise is relatively flat, this can be deceiving because it is bounded by steep canyons that range from 2,000 feet to 2,800 feet below the ridgetop in which it resides. As noted, these extremely deep, sheer canyons were directionally aligned with the strong winds, slamming the homes at the edge of the slopes and causing an ember storm that fell within the community (subsequently facilitating house-to-house spread).

Successful Examples of Similar Fire-Safe Projects. Other developments in Southern California that have been designed to resist wildfires have shown similar rates of significantly lowered loss when exposed to wildfire, including the 4S Ranch in the County, Stevenson's Ranch in Valencia, Serrano Heights in Orange County, and others. All of these communities were built with heightened requirements for fire safety, including hardened buildings, protected roofs, vent protections, maintained fuel modification zones, and others, all of which would be required of the proposed project. In contrast, wildfires have also occurred in and around Paradise and Santa Rosa (sometimes reburning the exact same areas), but little was done to reduce risk of structural loss there. In fact, the 2017 Tubbs Fire followed virtually the exact same footprint as the 1964 Hanley Fire; what differed from 1964 and 2017 was the amount of fire- prone homes that were built in the area. Had these homes been built with fire-resistant materials such as required by Chapter 7A of the California Fire Code, and further refined in the City of Santee and San Diego County, it is unlikely that the level of devastation would have been the same. Similarly, 13 significant wildfires occurred in the last 20 years around the community of Paradise, yet there seemed to be little mitigation to reduce the risk there. When the 2018 Camp Fire ignited under extreme weather conditions, a massive ember storm easily ignited older homes, which then caused a chain reaction of structure-to-structure ignitions.

While the County has been incredibly progressive in their attempts to reduce wildfire losses (especially following the 2003 Cedar fire), the sites recently impacted in Northern California did not seem to take their fire risk as seriously. For example, CAL FIRE reportedly warned Paradise as early as 2005 that the community was at risk of a devastating conflagration similar to that experienced in the 1991 Oakland Hills Fire, which killed 25 and destroyed 2,900 structures.[5] Butte County Fire Safe Council had been awarded over $600,000 in grant funding for fuels reduction in Paradise, but did not have time to utilize these funds before the fire burned through the community. That said, given the nature of ember-driven ignitions and subsequent house-to-house spread (with little impact to the adjacent forest), it is unclear if the fuel reduction would have led to a significant reduction in the level of destruction experienced during the Camp Fire. It is possible that utilizing these funds along with homeowner funds to retrofit older homes for ember resistance and structure hardening would have been more impactful.

Ignition Minimizing Measures. Wildfires in Southern California are almost always human-induced. Efforts to reduce risk of ignition within the proposed project would include undergrounding power lines, which would effectively eliminate a potential ignition source. Further, roadside clearance is planned within the community, which would reduce the risk of wildfire ignition from vehicles (via glowing catalytic converter debris, sparks from dragging chains, etc.). The wide FMZs would provide a buffer between humans and the open space areas, minimizing potential for accidental fires to escape into the unmaintained fuels. Please refer to Thematic Response – Fire Ignition and Risk for details regarding potential for human caused ignitions and measures provided to minimize risk.

Many of the destructive fires in the region (and also the recent devastating fires in Santa Rosa and Paradise) were ignited by power lines. Of note, however, SDG&E has recently taken a very aggressive approach at restricting ignitions via their power lines, becoming one of the most

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[5] St. John, P., J. Serna, and L. Rong-Gong II. 2018. Here's how Paradise ignored warnings and became a deathtrap. Los Angeles Times, 30-Dec.

progressive utilities in the world at closely monitoring conditions that might facilitate ignitions and rapid fire spread, and then taking appropriate steps to minimize fire starts, including shutting down the electrical grid in areas deemed to be potentially vulnerable to ignition. Further, the California Public Utilities Commission, as of February 6, 2019, now requires all energy companies in California to prepare comprehensive Wildfire Mitigation Plans. These plans provide detailed assessment and accounting of risk drivers and risk reduction measures being employed for each facility, including electrical transmission and distribution lines.

Finally, the proposed project would not be like Paradise or other communities that were built before current fire standards. The proposed project would include a multi-layered fire protection system that is based on ignition-resistant buildings and landscapes, adherence to stringent codes, firefighting water availability, swift emergency response, and sound evacuation planning that includes a contingency option for residents who may be directed to temporarily shelter within the community during a wildfire evacuation. The proposed project, like other new, master planned communities, should not be compared with older, less restrictive communities that were not built to the latest codes and do not implement ongoing maintenance. Other new, nearby communities with many of the same fire protection features have performed extremely well during wildfires.

Comment Letter F1: U.S. Fish and Wildlife Service, July 25, 2022

F1

From: Ludovissy, Jennifer@Wildlife <Jennifer.Ludovissy@Wildlife.ca.gov>
Sent: Monday, July 25, 2022 3:34 PM
To: OPR State Clearinghouse; Marni Borg
Cc: Mayer, David@Wildlife; Drewe, Karen@Wildlife; Schmalbach, Heather@Wildlife; Snyder, Jonathan; marybeth_woulfe@fws.gov; Jon_Avery@fws.gov; Garn, John C
Subject: Copy of letter re: Recirculated Sections of the Final Revised EIR for the Fanita Ranch Project
Attachments: 220725_2022-0067313_SD_Fanita Recirculated EIR joint comments.pdf

Good Afternoon,

Please see attached copy for your records. If you have any questions, please contact Heather Schmalbach (Heather.Schmalbach@wildlife.ca.gov) of the Department at 858-637-5511, or Jon Avery (jon_avery@fws.gov) or Mary Beth Woulfe (marybeth_woulfe@fws.gov) of the Service at 760-431-9440.

Thank you,
Jenny

JENNY LUDOVISSY | Staff Services Analyst
She/Her/Hers

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE
South Coast Region 5
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United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer to:
FWS/CDFW-2022-0067313

July 25, 2022
Sent Electronically

Chris Jacobs
City of Santee
City Hall, Building 4
10601 Magnolia Avenue
Santee, California 92071

Subject: Recirculated Sections of the Final Revised EIR for the Fanita Ranch Project, City of Santee (SCH 2005061118)

Dear Mr. Jacobs:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department), collectively referred to as the Wildlife Agencies, reviewed the Recirculated Sections of the Final Revised Environmental Impact Report (EIR) for the Fanita Ranch Project (Project) dated June 2022. The Project details referenced herein are based on information provided in the EIR and associated documents.

F1-1

The primary concern and mandate of the Service is the protection of fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and threatened and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Federal Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), including habitat conservation plans (HCP) developed under section 10(a)(l)(B) of the ESA. The Department is a Trustee Agency with jurisdiction over natural resources affected by the project [California Environmental Quality Act (CEQA) Guidelines §15386] and is a Responsible Agency under CEQA Guidelines Section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code §2050 *et seq.*) and Fish and Game Code Section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) Program, a California regional habitat conservation planning program. The City of Santee (City) is in the process of developing an NCCP/HCP Subarea Plan under the Multiple Species Conservation Program (MSCP) Subregional Plan; however, a Subarea Plan has not yet been adopted by the City of Santee (City) or permitted by the Service or the Department. The Wildlife Agencies continue to meet frequently with the City in an effort to achieve a Subarea Plan which will be brought forward for public review.

F1-1: This comment provides an introduction to the comment letter and states the purpose of both the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Chris Jacobs (FWS/CDFW-2022-0067313) 2

The Project proposes a planned community located within the northwest portion of the City that includes up to 3,008 housing units, commercial uses, parks, agricultural areas and open space. Approximately 1,650 acres would be designated as a Habitat Preserve (Preserve). The Recirculated Sections of the EIR were prepared in response to a March 2022 ruling issued by the San Diego County Superior Court that identified deficiencies in the 2020 EIR related to CEQA processes and insufficient analysis of wildfire risk and evacuation. The Recirculated Sections include revisions to the Project Description and Land Use and Planning sections (3.0 and 4.10, respectively), as well as a fully revised Wildfire section (4.18), new Fire Protection Plan (Appendix P1), and new Wildland Fire Evacuation Plan (Appendix P2).

F1-2 Per the EIR, the description of the Fanita Ranch Project has not changed from the Final Revised EIR (dated May 2020) except that the off-site extension of Magnolia Avenue has been added back into the Project and the description of discretionary actions has been revised. Changes to the discretionary actions are a result of the recent certification of the Fanita Ranch Project as an Essential Housing Project pursuant to the City's Essential Housing Program (established in August 2021). Accordingly, per the Recirculated Sections the Project no longer requires a General Plan Amendment, Specific Plan, Rezone, or Development Agreement. The EIR states that no new or modified mitigation measures are required. This response letter only responds to the topics identified in the Final Revised EIR. The Wildlife Agencies continue to work with the City and the project proponent to ensure that impacts to species are addressed consistent with section 10 of the ESA and the NCCP Program.

The Wildlife Agencies offer the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources and to ensure the Project is consistent with ongoing regional habitat conservation planning efforts:

F1-3 1. Magnolia Avenue Expansion: The revised project description includes the previously proposed but subsequently removed expansion of Magnolia Avenue from Princess Joann Road to Cuyamaca Street (evaluated in the Draft EIR but removed prior to finalization). The removal of the road expansion was documented in the Second Errata to the Final Revised Fanita Ranch EIR (Second Errata, September 2020). Magnolia Avenue is an existing north-south City street that currently terminates at the northern edge of the existing neighborhood, southeast of the Project site. The proposed expansion would extend Magnolia Avenue 0.5 mile from its northern terminus, curving west to intersect with the extended off-site segment of Cuyamaca Street. Per Section 1.3.2.2 of the Second Errata, impacts associated with the Magnolia Avenue extension total 14.35 acres, including 8.0 acres of impacts to sensitive habitats and wetlands.

We recommend the Mitigation, Monitoring, and Reporting Program (MMRP) be revised to include mitigation requirements for impacts associated with the Magnolia Avenue expansion being added back into the Project, including preconstruction surveys and avoidance/minimization measures for special-status plants and wildlife species, restoration of temporary impacts

F1-2: This comment describes the proposed project and identifies which sections were recirculated. This comment further repeats the Preface of the Recirculated Sections, stating that the proposed project has not changed except that the extension of Magnolia Avenue has been added back into the project. This comment states that the comment letter only responds to the Final Revised EIR. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

F1-3: This comment describes the proposed off-site extension of Magnolia Avenue and that it is being brought back as part of the proposed project. The comment further recommends that the Mitigation Monitoring and Reporting Program be revised to include mitigation measure requirements for impacts associated with the extension of Magnolia Avenue, including any biological resources measures. The City agrees the Mitigation Monitoring and Reporting Program will be updated to include any applicable mitigation originally identified in the Final Revised EIR pertaining to the off-site extension of Magnolia Avenue.

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F1-3 cont.

(including success criteria for that restoration), compensatory mitigation for permanent impacts, and mitigation measures to minimize potential impacts to species' movement and habitat connectivity across Magnolia Avenue, particularly through installation of appropriately sized culverts and inclusion of directional fencing or other features to facilitate safe wildlife movement. The effectiveness of measures to ensure connectivity for wildlife should be monitored and reported annually until such time as this responsibility may be taken over as part of an approved NCCP/HCP.

2. Essential Housing Program: In August 2021, the City adopted an Essential Housing Program (Ordinance 592) by which certain qualifying residential housing projects can be deemed in compliance with the City's General Plan and, therefore, not subject to General Plan Amendments in order to move forward with entitlements. The determination as to whether a project qualifies as an Essential Housing Project is ministerial and made by the Director of Development Services based upon objective criteria set forth in a Checklist (City of Santee Essential Housing Program). In December 2021, the Fanita Ranch Project was certified as an Essential Housing Project by the City. Both adoption of the Essential Housing Program ordinance and the certification of Essential Housing projects were determined to be exempt from CEQA by the City.

F1-4

It is not clear whether the City has determined that projects approved ministerially in this manner are entirely exempt from CEQA or whether projects approved in this manner will still be subject to CEQA but may move forward without a general plan amendment. This is an important distinction because the Wildlife Agencies look to the General Plan to provide guidance on how the City would approve the build-out of development projects as well as achieve conservation goals and objectives of the Subarea Plan. Additionally, certain provisions of the NCCP/HCP are required to be amended into the General Plan upon issuance of the state and Federal permits to ensure compliance with the terms of the NCCP/HCP; therefore, it is important for the Wildlife Agencies to understand how the General Plan, ministerial actions, and requirements of the NCCP/HCP will be applied on forthcoming projects. We would appreciate clarification on this point.

F1-5

Under the MSCP, jurisdictions responsible for implementing subarea plans have used CEQA to officially notify the public and the Wildlife Agencies about projects or activities proposed to be covered under the NCCP/HCP and to solicit feedback on NCCP/HCP consistency. We look forward to working with the City to ensure that the subarea plan includes a well-defined process for the Wildlife Agencies to review and provide feedback on projects proposed for NCCP/HCP coverage at the appropriate point in the planning process regardless of the CEQA review process. In addition, public involvement is a key consideration of the NCCP Act, so the Department encourages the City to develop a process that provides the public an opportunity to review and comment on projects or activities addressed by the NCCP/HCP regardless of the CEQA review process.

F1-4: The comment states that it is not clear whether projects processed pursuant to the City's Essential Housing Program (Ordinance 592) are approved ministerially and entirely exempt from the California Environmental Quality Act (CEQA) or remain subject to CEQA but may move forward without a General Plan Amendment. The comment requests clarification on this point. The comment also states that certain provisions of the Natural Community Conservation Program/Habitat Conservation Plan (NCCP/HCP) are required to be amended into the General Plan upon issuance of the state and federal permits to ensure compliance with the terms of the NCCP/HCP.

The City's Essential Housing Program (Ordinance No. 592) requires that housing projects that are certified under the Program—and thereby able to take advantage of the streamlined review process—must comply with CEQA and other state laws prior to City consideration for approval. Refer to Ordinance No. 592, Sections 3 and 4(H)(2).

Ordinance No. 592 establishes the City's Essential Housing Program, which provides a streamlining tool for projects that demonstrate General Plan consistency and environmental excellence by meeting the stringent requirements of the City of Santee Essential Housing Project Credits Assessment Guide and Checklist.

Ordinance No. 592 specifically exempts compliant projects from needing to seek legislative approvals, which are known to delay housing, and expedites the City's review process. (Refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency; California Legislative Analyst Office, "California's High Housing Cost: Causes and Consequences," California Legislative Analyst Office 2015, pp. 13–17, 20, 35 [additional legislative acts and entitlements "delay and add to the cost of housing"]; Kok, Nils, Paavo Monkkonen and John M. Quigley, "Land Use Regulations and the Value of Land and Housing: An Intra-Metropolitan Analysis," 2014, Journal of Urban Economics 81[3]: 136–148 [greater number of discretionary reviews and approvals to obtain a building permit or a zone change results in higher land and housing prices, even after controlling for locational, geographic, and demographic characteristics.].)

Certification of an Essential Housing Project under the Essential Housing Program is a ministerial act based on whether a housing project meets the requirements of the City of Santee Essential Housing Project Credits Assessment Guide and Checklist (Appendix R, Essential Housing Ordinance, Sections E through H). Once certified, projects are processed by the City subject to expedited processing and must comply with CEQA and other state laws prior to approval (or denial) by the

appropriate City decision maker (Appendix R, Essential Housing Ordinance, Section 4[H][2], [I], [J]).

Ordinance 592, Section 4(H)(2), is explicit: "A proposed Housing Development Project that is certified as an Essential Housing Project shall be required to comply with CEQA and other state laws prior to project approval or denial. Further, the Director's determination will enhance, rather than degrade, existing environmental conditions by ensuring that a certified Essential Housing Project meets stringent environmental standards." Further, Ordinance No. 592, Section 3, explains:

> By enacting these policies and procedures, the City is not causing any alteration to the physical environment; and any certified project that satisfies these policies and procedures must still comply fully the CEQA, the CEQA Guidelines, and all other applicable laws and regulations before any development of any kind can proceed. Thus, CEQA compliance is assured. Further, the City's enactment of these policies and procedures will enhance, rather than degrade, existing environmental conditions by ensuring that any certified project demonstrate compliance with stringent environmental standards.
>
> The City also finds that choosing the precise time for CEQA compliance involves a balancing of competing factors. For example, CEQA recognizes that CEQA

> compliance should occur as project scope, design, features, and other factors and yet late enough to provide meaningful non-speculative information for environmental assessment. Accordingly, the City finds that by adopting this Ordinance, the City is not restricting itself from considering any feasible or reasonable choice of alternatives or mitigation measures for a certified project before completion of its CEQA compliance, nor committing itself to any definite course of action concerning a certified project prior to its CEQA compliance. Further, nothing herein restricts the City from denying a certified project on CEQA or other objective grounds.

(*Id.* [emphasis added.])

Consistent with Ordinance No. 592, the Recirculated Sections of the Final Revised EIR for the proposed project were revised and recirculated in compliance with CEQA to address the deficiencies identified in the trial court's ruling and to describe the changes to the requested discretionary approvals. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections.

To the extent the comment addresses the NCCP/HCP or inquires about the Essential Housing Program's application to other projects, the comment is not within scope of the Recirculated Sections of the Final Revised EIR and does not raise a significant environmental issue

regarding the adequacy or accuracy of information provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims, and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

F1-5: The comment states that the wildlife agencies look forward to developing a well-defined process to allow for wildlife agency review and feedback on projects proposed for NCCP/HCP coverage and encourages the City to develop a process that provides the public an opportunity to review and comment on projects addressed by the NCCP/HCP.

The comment is not within the scope of the Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Therefore, no further response is required.

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Chris Jacobs (FWS/CDFW-2022-0067313) 4

3. Fuel Modification Zones: Fuel modification zones (FMZs) are proposed as part of the Fanita Ranch development to provide buffers between wildfire fuels associated with existing vegetation that would remain on-site (e.g., within the proposed Preserve) and the proposed development structures. Additional FMZs are currently existing or proposed on the project site along existing development immediately offsite. The proposed project's FMZs would be extensive and include "code-exceeding" 115 to 165-foot-wide FMZs, up to 50 feet of roadside FMZ, and provisions for a 100-foot wide FMZ adjacent to neighboring residential areas to the south. The proposed FMZs would provide some separation from the unmaintained vegetation occurring outside the FMZs. As proposed, the landscape throughout the project and on its perimeter would be highly maintained, with much of it irrigated (all proposed zone 1 setback areas, common areas throughout the community and private yards). As proposed, the FMZs would include low-fuel, maintained vegetation, including 65 feet of irrigated zone, resulting in high vegetation moisture in these areas.

F1-6

Exotic Argentine ants likely do not occupy the vast majority of the project site currently, due to the natural dryness across most of the site and its location away from the immediate coast. Argentine ants are expected to invade large portions of the proposed Preserve if the project is implemented as proposed. Natural sites located within 200 meters of urban areas or artificial irrigation in coastal southern California are more likely to be invaded by Argentine ants, largely due to the artificial water resources provided by these land uses (Richmond *et al.* 2021). Within invaded sites, native ants are largely displaced by Argentine ants, and the species richness of native ants typically declines by more than 60 percent compared with uninvaded sites (Holway and Case 2000; Achury *et al.* 2021). In colonized areas, the Argentine ant drives substantial ecological changes in biodiversity, community structure, and ecosystem function (Charles and Dukes 2008; Lach 2008; Rodriguez-Cabal *et al.* 2009; Hanna *et al.* 2015), particularly in areas with a Mediterranean climate (Suarez *et al.* 2001, Holway *et al.* 2002) such as the project site. For example, case studies have reported that Argentine ants eliminated species of *Camponotus* ants that are highly important prey for the San Diego horned lizard (*Phrynosoma coronatum blainvillii*) (Suarez and Case 2002; Glenn and Holway 2008). Control of Argentine ants within natural areas in southern California is extremely difficult, in part because killing worker ants does little to control an Argentine ant colony, and because as few as 1.0 percent of a colony's foraging worker ants are able to provide sufficient food to support nestbound queens and larvae; additionally, finding an effective number of Argentine ant nests is very difficult and usually not practicable (Skaife 1955; UC Davis 2017). While the killing of Argentine ants is possible with pesticides, these pesticides can also have negative effects on native species (Buczkowski and Wossler 2019).

The applicant has proposed Argentine ant control measures as part of negotiations with the Wildlife Agencies for prospective NCCP and ESA section 10 permits for the proposed project. Control of Argentine ants in the natural areas (Preserve) of the project site within 200 meters of any artificial irrigation would likely need to be perpetual and ongoing. Further, eradication of Argentine ants within the areas adjacent to artificial irrigation is likely extremely difficult or

F1-6: The comment states that there would be a 65-foot irrigated zone within the proposed project's Fuel Modification Zones (FMZs). The comment states that Argentine ants do not occupy a vast majority of the project site and are expected to invade large portions of the Habitat Preserve if the proposed project is implemented as proposed. The comment discusses, generally, the negative effects that Argentine ants have on native ants, biodiversity, community structure, and ecosystem function, and the comment summarizes the difficulty in controlling Argentine ants. The comment acknowledges that the proposed Argentine ant control measures were discussed with the wildlife agencies. The comment recommends that irrigation be minimized within the FMZs to the extent compatible with public safety along the edge of the Preserve in order to reduce the ecological impact of Argentine ants within the proposed project's Habitat Preserve.

The comment correctly states that there would be a 65-foot irrigated zone within the FMZs. The irrigated FMZs cannot be reduced, as recommended in the comment, since it provides a necessary and required ignition-resistant buffer for the proposed project development from wildfires. However, water application is required to be efficient to irrigate plants while minimizing evaporation and runoff. In addition, various measures and best

management practices would be implemented to minimize runoff. Refer to Recirculated Sections, Section 3.8, Smart Growth and Sustainability Features, and Section 4.18.5.4, Threshold 5: Emergency Response and Evacuation Plans.

With respect to Argentine ants, the comment addresses biological resource issues that are not within scope of the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. The size of the irrigated zone within the proposed project's FMZs has not changed compared to what was analyzed in the Final Revised EIR. Any proposed project impact related to Argentine ants remains the same as before such that any concerns were required to be previously raised and are not currently at issue. (Ione Valley Land, Air, & Water Defense Alliance, LLC v. County of Amador (2019) 33 Cal.App.5th 165, 170–173, as modified (Mar. 20, 2019); Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th 1099, 1112, as modified (Apr. 9, 2004); Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal.App.4th 455, 480–481 ["any challenge to an EIR or other agency action arising from facts in existence before the entry of judgment must be asserted in the proceeding before the entry of judgment" and is precluded from being asserted in "post-judgment proceedings concerning compliance with the writ"].)

The Final Revised EIR evaluated potential impacts related to Argentine ants, including but not limited to the following:

- The Preserve Management Plan "includes habitat management requirements and activities known to benefit [Quino checkerspot butterfly], (i.e., . . . Argentine ant and invasive plant species removal . . .), based on the Draft Santee MSCP [Multiple Species Conservation Program] Subarea Plan and the USFWS [U.S. Fish and Wildlife Service] Recovery Plan for Quino checkerspot butterfly (March 2019 Draft Amendment)" (Appendix D, Biological Technical Report, Section 1.2 and Table 1-1).
- "Potential permanent indirect impacts to biological resources may also occur as a result of the proposed project through introduction of non-native species (e.g., Argentine ants [*Linepithema humile*])" (Appendix D, Biological Technical Report, Section 5.2).
- "Permanent indirect edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, unauthorized trail use, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., changes in surface and groundwater level and quality). Not only can altered hydrology directly affect special-status plants, increased moisture associated with irrigation and runoff can attract invasive Argentine ants

[*Linepithema humile*], which could displace native ants (e.g., harvester ants [*Messor* spp., *Pogonomyrmex* spp.]) that are potential pollinators and seed dispersers for special-status plants. . . . Control measures and quarterly monitoring of Argentine ants will occur along the construction–Habitat Preserve interface (MM-BIO-[11]) to reduce impacts to native ants so that the impact to special-status plant species would be less than significant" (Appendix D, Biological Technical Report, Section 5.2.2; see also, Final Revised EIR, Section 4.3.5).

- "Permanent indirect impacts to special-status wildlife species could occur from Argentine ants. Argentine ants are known to displace native insects that are the main prey base for many special-status wildlife species, and possibly help promote other non-native invertebrates such as earwigs and sowbugs, which could affect the Quino checkerspot butterfly. Control measures and quarterly monitoring of Argentine ants will occur along the construction–Habitat Preserve interface (MM-BIO-[11]) to reduce impacts to native ants so that the impact to special-status wildlife species would be less than significant" (Appendix D, Biological Technical Report, Section 5.2.3; see also Final Revised EIR, Section 4.3.5).
- "MM-BIO-11 **Argentine Ant Control and Monitoring**. Upon initiating construction, including landscaping within the development area, quarterly

monitoring by a qualified biologist shall be initiated for Argentine ants along the development–Habitat Preserve interface at sentinel locations where invasions could occur (e.g., where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the monitoring locations. Ant pitfall traps, bait sampling, or similarly appropriate sampling method will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures will be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to nest/mound insecticide treatment or available natural control methods being developed. A general reconnaissance of the infested area would also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, or collected water. Quarterly monitoring reports, as needed, shall be submitted to the City of Santee Development Services Department. Monitoring reports shall include remedial recommendations and issue resolution discussions when necessary. Monitoring and control of Argentine ants shall occur in perpetuity and shall be included in the Preserve Management Plan (included as Appendix P in the Biological Technical Report for the Fanita

Ranch Project). See Biological Technical Report for the Fanita Ranch Project, Appendix P, for additional details on monitoring methods and control of Argentine ants within the Habitat Preserve" (Final Revised EIR, Section 4.3).

- "Implementation of Mitigation Measure BIO-11 would reduce permanent indirect impacts to special-status plant and wildlife species from Argentine ants to a less than significant level. This measure requires control measures and quarterly monitoring of Argentine ants along the construction–Habitat Preserve interface" (Final Revised EIR, Section 4.3.5).
- See also, Final Revised EIR, Table 4.3-20, Multiple Species Conservation Program Consistency Analysis.

Thus, the Final Revised EIR acknowledged that Argentine ants can result in negative effects and therefore provided mitigation to reduce potential project impacts to less than significant. Refer to Final Revised EIR, Section 4.3, Biological Resources, Mitigation Measure BIO-11, and Appendix D, Biological Technical Report, for additional information. As acknowledged by the comment, the proposed project would implement monitoring and control measures, in perpetuity, to reduce impacts resulting from Argentine ants within the Habitat Preserve.

The revisions in the Recirculated Sections do not change the impact of the proposed project related to Argentine

ants and adopted control measures compared to what was evaluated in the Final Revised EIR. (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149, Fort Mojave Indian Tribe v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606.) At this stage of post-judgment corrective action, the interests of finality must take precedence. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481, Tiburon Open Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.) The impacts of the proposed project related to the impact evaluation and mitigation measures adopted to control and monitor Argentine ants are deemed to have been adequately addressed in the Final Revised EIR and are not currently at issue.

In any event, the City disagrees that Argentine ants are anticipated to invade a large portion of the Habitat Preserve if the proposed project is implemented as proposed. Argentine ants may already occur within the Habitat Preserve due to the surrounding development. In-perpetuity monitoring will be conducted within the Habitat Preserve to ensure Argentine ants do not spread further throughout the Habitat Preserve after project implementation. Furthermore, the proposed irrigated FMZs would not require high irrigation rates resulting in runoff or standing/ponded water, both of which can attract Argentine ants, as discussed above.

Further, the commenter does not disclose a recent paper by Couper et al. (2021) in Ecology.[1] This study in Northern California is the culmination of a 28-year effort that concluded that the distribution of Argentine ants on their preserve had shrunk as a result of climate change. They found that Argentine ant-occupied areas shrank by 30 percent between 1994 and 2020, and native ants expanded 70 percent during that time period. There is evidence to predict that Argentine ants will pose less of a problem as water control programs, targeted irrigation, and climate change occur in this region.

[1] Couper, L.I., N.J. Sanders, N.E. Heller, and D.M. Gordon. 2021. Multiyear drought exacerbates long-term effects of climate on an invasive ant species. Ecology 102(10):e03476. 10.1002/ecy.3476.

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F1-6 cont.

impossible, and effective control of Argentine ants is likely to be very difficult as well. Therefore, we recommend that such irrigation be minimized to the extent compatible with public safety along the edge of the Preserve. Any reduction of irrigation areas along the edge of the Preserve (including adjacent to proposed roads that would cross or share a boundary with natural areas) would likely result in a concomitant reduction in the ecological impacts of Argentine ants in the Preserve.

F1-7

4. Homeowner's Association (HOA) Roles: Per Appendix P1, responsibility for the monitoring, maintenance, enforcement, and funding of the FMZs would fall to the HOA. As currently contemplated in Fanita Ranch planning documents, the HOA will also have responsibility for overseeing management of the Fanita Ranch Preserve, Argentine Ant Control Plan, trail system maintenance, maintenance of private roads and fire protection systems, fuel modification and vegetation management, enforcement, landscape plan review/approval, and educational outreach on wildfire safety. The Wildlife Agencies are concerned that an HOA will not be able to effectively implement the numerous responsibilities envisioned by the Project. Likewise, the Wildlife Agencies request additional coordination with the City and project proponent to discuss the oversight of the HOA maintenance activities; assurances that will be in place in the event that the HOA does not fulfill the identified obligations; the process by which any disputes about the management or funding provided by the HOA will be resolved; and how the funds will be obligated and managed to complete the various tasks identified in the Fanita Ranch planning documents. Based on the uncertainties described above, the Wildlife Agencies have not yet agreed that this arrangement will satisfy the requirements of the NCCP/HCP.

F1-8

5. Avian Nesting Season Avoidance: Section 6.2.15 of Appendix P1 states that vegetation maintenance for fuel modification activities will occur throughout the year. Nests of all birds and raptors are protected under State laws and regulations, including Fish and Game Code, sections 3503 and 3503.5. Take or possession of migratory nongame birds designated in the Federal Migratory Bird Treaty Act of 1918 (Code of Federal Regulations, Title 50, § 10.13) is also prohibited under Fish and Game Code section 3513. In order to avoid impacts to nesting birds, we recommend that maintenance activities be scheduled and conducted outside of the avian breeding season (generally February 15–September 15).

The avoidance, minimization, and mitigation measures associated with the Project for nesting bird species will be identified in the final NCCP/HCP Subarea Plan and will be implemented accordingly.

F1-9

6. Subsequent CEQA/NEPA: We anticipate that aspects of the Project will undergo subsequent CEQA/NEPA analysis as a proposed hardline project under the NCCP/HCP Draft Subarea Plan. Please clarify if that is the expectation of the City.

F1-7: This comment discusses the role of the homeowners association (HOA) for monitoring, maintenance, enforcement, and funding of the FMZs and questions whether this arrangement would satisfy the NCCP/HCP. The comment is not within scope of Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Issues related to the proposed project's interplay with the NCCP/HCP Draft Subarea Plan are deemed to have been adequately addressed and resolved in connection with the prior Final Revised EIR certification and litigation and are not currently at issue in the Recirculated Sections.

F1-8: The comment notes that vegetation maintenance for fuel modification activities will occur throughout the year and recommends that such activities be scheduled and conducted outside the avian breeding season. The comment also states that "avoidance, minimization, and mitigation measures associated with the Project for nesting bird species will be identified in the final NCCP/HCP Subarea Plan and will be implemented accordingly."

The comment is not within scope of Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. The vegetation maintenance for fuel management activities referenced in Appendix P1, Wildland Fire Evacuation Plan, of the Recirculated Sections and summarized in Section 3.6 have not changed compared to what was analyzed in the Final Revised EIR. Specifically:

> Vegetation maintenance would occur throughout the year and would be monitored and enforced by the HOA. Property owners and private lot owners would be responsible for vegetation management on their lots in compliance with the FPP [Fire Protection Plan]. The HOA would hire a third-party FMZ inspector and a third-party landscape plan reviewer to ensure that the required fuel reduction work occurs and the FMZs remain functional. The third-party FMZ inspector and landscape plan reviewer would prepare reports twice per year (June and late September) that document the functional condition of all HOA-maintained property and provide the reports to the HOA and the SFD [Santee Fire Department]. If the findings in a report indicate that any of the HOA-maintained properties are out of compliance,

then the HOA would be responsible to bring the property into compliance. The HOA would hire an Approved Maintenance Entity (AME) to perform the maintenance in all HOA- maintained property.

(Refer to Recirculated Sections, Section 3.6, *compare,* Final Revised EIR, Section 3.6.1).

Further, the Final Revised EIR described nesting season avoidance Mitigation Measure BIO-14 and that implementation of the Fire Protection Plan would reduce indirect impacts to sensitive species by minimizing potential exposure to fire hazards (Mitigation Measure BIO-21) (Final Revised EIR, Section 4.3.5). The Final Revised EIR also describes the consistency with the Draft MSCP Subarea Plan in Section 4.3.5.6 and the First Errata, Section 4.2.5.

There are no changes to the proposed project's vegetation maintenance for fuel management such that alter proposed project impacts to bird species would be unchanged compared to the review in the Final Revised EIR. Thus, avian nesting season avoidance is deemed to have been resolved in connection with the prior Final Revised EIR certification and litigation and is not currently at issue in the Recirculated Sections. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481; Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149; Fort Mojave Indian Tribe

v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606; Tiburon Open Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.) (Ibid.) No further response is required.

F1-9: The comment states requests clarification regarding whether the proposed project will undergo subsequent CEQA/National Environmental Policy Act analysis as a proposed hardline project under the NCCP/HCP Draft Subarea Plan.

The comment is not within scope of Recirculated Sections of the Final Revised EIR and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Issues related to the proposed project's interplay with NCCP/HCP Draft Subarea Plan are deemed to have been adequately addressed and resolved in connection with the prior Final Revised EIR certification and litigation and are not currently at issue in the Recirculated Sections. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481; Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149; Fort Mojave Indian Tribe v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606; Tiburon Open

Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.)

For informational purposes only, the City refers the commenter to Final Revised EIR, Section 4.3, Biological Resources (Sections 4.3.5.6 and 4.3.6.6), and First Errata, Section 4.2.5, which discuss the origin and status of the Draft MSCP Subarea Plan, the proposed project's consistency with the Draft MSCP Subarea Plan, and relationship between Section 7 and Section 10 approvals. See also, Recirculated Sections, Section 3.12, Discretionary Actions, which describes the additional approvals, permits, licenses, certifications, or other entitlements that the proposed project may require from various federal, state, and local agencies, which are unchanged from the Final Revised EIR.

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F1-10

The Wildlife Agencies have worked with the City and the proposed Fanita Ranch project proponent to reach the goal of issuance of a NCCP/HCP. The many years of collaboration has included the City receiving two section 6 grants to support the City in achieving the NCCP/HCP. We appreciate the opportunity to comment on the EIR and look forward to our continued collaboration in developing the City's Subarea Plan. If you have questions or comments regarding this letter, please contact Heather Schmalbach[1] of the Department at 858-637-5511 or Jon Avery[2] or Mary Beth Woulfe[3] of the Service at 760-431-9440.

Sincerely,

JONATHAN SNYDER Digitally signed by JONATHAN SNYDER Date: 2022.07.25 14:25:29 -07'00'

Jonathan Snyder
Assistant Field Supervisor
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for David Mayer
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F1-10: This comment states the many years of collaboration between the wildlife agencies and the City and provides contact information for questions on this comment letter. This is a concluding paragraph and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter S1: California Department of Fish and Wildlife, July 25, 2022

S1

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Sent: Monday, July 25, 2022 3:34 PM
To: OPR State Clearinghouse; Marni Borg
Cc: Mayer, David@Wildlife; Drewe, Karen@Wildlife; Schmalbach, Heather@Wildlife; Snyder, Jonathan; marybeth_woulfe@fws.gov; Jon_Avery@fws.gov; Garn, John C
Subject: Copy of letter re: Recirculated Sections of the Final Revised EIR for the Fanita Ranch Project
Attachments: 220725_2022-0067313_SD_Fanita Recirculated EIR joint comments.pdf

Good Afternoon,

Please see attached copy for your records. If you have any questions, please contact Heather Schmalbach (Heather.Schmalbach@wildlife.ca.gov) of the Department at 858-637-5511, or Jon Avery (jon_avery@fws.gov) or Mary Beth Woulfe (marybeth_woulfe@fws.gov) of the Service at 760-431-9440.

Thank you,
Jenny

JENNY LUDOVISSY | Staff Services Analyst
She/Her/Hers

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE
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United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer to:
FWS/CDFW-2022-0067313

July 25, 2022
Sent Electronically

Chris Jacobs
City of Santee
City Hall, Building 4
10601 Magnolia Avenue
Santee, California 92071

Subject: Recirculated Sections of the Final Revised EIR for the Fanita Ranch Project, City of Santee (SCH 2005061118)

Dear Mr. Jacobs:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (Department), collectively referred to as the Wildlife Agencies, reviewed the Recirculated Sections of the Final Revised Environmental Impact Report (EIR) for the Fanita Ranch Project (Project) dated June 2022. The Project details referenced herein are based on information provided in the EIR and associated documents.

S1-1

The primary concern and mandate of the Service is the protection of fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and threatened and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Federal Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), including habitat conservation plans (HCP) developed under section 10(a)(l)(B) of the ESA. The Department is a Trustee Agency with jurisdiction over natural resources affected by the project [California Environmental Quality Act (CEQA) Guidelines §15386] and is a Responsible Agency under CEQA Guidelines Section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code §2050 *et seq.*) and Fish and Game Code Section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) Program, a California regional habitat conservation planning program. The City of Santee (City) is in the process of developing an NCCP/HCP Subarea Plan under the Multiple Species Conservation Program (MSCP) Subregional Plan; however, a Subarea Plan has not yet been adopted by the City of Santee (City) or permitted by the Service or the Department. The Wildlife Agencies continue to meet frequently with the City in an effort to achieve a Subarea Plan which will be brought forward for public review.

S1-1: This comment provides an introduction to the comment letter and states the purpose of both the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Chris Jacobs (FWS/CDFW-2022-0067313) 2

The Project proposes a planned community located within the northwest portion of the City that includes up to 3,008 housing units, commercial uses, parks, agricultural areas and open space. Approximately 1,650 acres would be designated as a Habitat Preserve (Preserve). The Recirculated Sections of the EIR were prepared in response to a March 2022 ruling issued by the San Diego County Superior Court that identified deficiencies in the 2020 EIR related to CEQA processes and insufficient analysis of wildfire risk and evacuation. The Recirculated Sections include revisions to the Project Description and Land Use and Planning sections (3.0 and 4.10, respectively), as well as a fully revised Wildfire section (4.18), new Fire Protection Plan (Appendix P1), and new Wildland Fire Evacuation Plan (Appendix P2).

S1-2 Per the EIR, the description of the Fanita Ranch Project has not changed from the Final Revised EIR (dated May 2020) except that the off-site extension of Magnolia Avenue has been added back into the Project and the description of discretionary actions has been revised. Changes to the discretionary actions are a result of the recent certification of the Fanita Ranch Project as an Essential Housing Project pursuant to the City's Essential Housing Program (established in August 2021). Accordingly, per the Recirculated Sections the Project no longer requires a General Plan Amendment, Specific Plan, Rezone, or Development Agreement. The EIR states that no new or modified mitigation measures are required. This response letter only responds to the topics identified in the Final Revised EIR. The Wildlife Agencies continue to work with the City and the project proponent to ensure that impacts to species are addressed consistent with section 10 of the ESA and the NCCP Program.

The Wildlife Agencies offer the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources and to ensure the Project is consistent with ongoing regional habitat conservation planning efforts:

S1-3 1. Magnolia Avenue Expansion: The revised project description includes the previously proposed but subsequently removed expansion of Magnolia Avenue from Princess Joann Road to Cuyamaca Street (evaluated in the Draft EIR but removed prior to finalization). The removal of the road expansion was documented in the Second Errata to the Final Revised Fanita Ranch EIR (Second Errata, September 2020). Magnolia Avenue is an existing north-south City street that currently terminates at the northern edge of the existing neighborhood, southeast of the Project site. The proposed expansion would extend Magnolia Avenue 0.5 mile from its northern terminus, curving west to intersect with the extended off-site segment of Cuyamaca Street. Per Section 1.3.2.2 of the Second Errata, impacts associated with the Magnolia Avenue extension total 14.35 acres, including 8.0 acres of impacts to sensitive habitats and wetlands.

We recommend the Mitigation, Monitoring, and Reporting Program (MMRP) be revised to include mitigation requirements for impacts associated with the Magnolia Avenue expansion being added back into the Project, including preconstruction surveys and avoidance/minimization measures for special-status plants and wildlife species, restoration of temporary impacts

S1-2: This comment describes the proposed project and identifies which sections were recirculated. This comment further repeats the Preface of the Recirculated Sections, stating that the proposed project has not changed except that the extension of Magnolia Avenue has been added back into the project. This comment states that the comment letter only responds to the Final Revised EIR. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S1-3: This comment describes the proposed off-site extension of Magnolia Avenue and that it is being brought back as part of the proposed project. The comment further recommends that the Mitigation Monitoring and Reporting Program be revised to include mitigation measure requirements for impacts associated with the extension of Magnolia Avenue, including any biological resources measures. The City agrees the Mitigation Monitoring and Reporting Program will be updated to include any applicable mitigation originally identified in the Final Revised EIR pertaining to the off-site extension of Magnolia Avenue.

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S1-3 cont.

(including success criteria for that restoration), compensatory mitigation for permanent impacts, and mitigation measures to minimize potential impacts to species' movement and habitat connectivity across Magnolia Avenue, particularly through installation of appropriately sized culverts and inclusion of directional fencing or other features to facilitate safe wildlife movement. The effectiveness of measures to ensure connectivity for wildlife should be monitored and reported annually until such time as this responsibility may be taken over as part of an approved NCCP/HCP.

2. Essential Housing Program: In August 2021, the City adopted an Essential Housing Program (Ordinance 592) by which certain qualifying residential housing projects can be deemed in compliance with the City's General Plan and, therefore, not subject to General Plan Amendments in order to move forward with entitlements. The determination as to whether a project qualifies as an Essential Housing Project is ministerial and made by the Director of Development Services based upon objective criteria set forth in a Checklist (City of Santee Essential Housing Program). In December 2021, the Fanita Ranch Project was certified as an Essential Housing Project by the City. Both adoption of the Essential Housing Program ordinance and the certification of Essential Housing projects were determined to be exempt from CEQA by the City.

S1-4

It is not clear whether the City has determined that projects approved ministerially in this manner are entirely exempt from CEQA or whether projects approved in this manner will still be subject to CEQA but may move forward without a general plan amendment. This is an important distinction because the Wildlife Agencies look to the General Plan to provide guidance on how the City would approve the build-out of development projects as well as achieve conservation goals and objectives of the Subarea Plan. Additionally, certain provisions of the NCCP/HCP are required to be amended into the General Plan upon issuance of the state and Federal permits to ensure compliance with the terms of the NCCP/HCP; therefore, it is important for the Wildlife Agencies to understand how the General Plan, ministerial actions, and requirements of the NCCP/HCP will be applied on forthcoming projects. We would appreciate clarification on this point.

S1-5

Under the MSCP, jurisdictions responsible for implementing subarea plans have used CEQA to officially notify the public and the Wildlife Agencies about projects or activities proposed to be covered under the NCCP/HCP and to solicit feedback on NCCP/HCP consistency. We look forward to working with the City to ensure that the subarea plan includes a well-defined process for the Wildlife Agencies to review and provide feedback on projects proposed for NCCP/HCP coverage at the appropriate point in the planning process regardless of the CEQA review process. In addition, public involvement is a key consideration of the NCCP Act, so the Department encourages the City to develop a process that provides the public an opportunity to review and comment on projects or activities addressed by the NCCP/HCP regardless of the CEQA review process.

S1-4: The comment states that it is not clear whether projects processed pursuant to the City's Essential Housing Program (Ordinance 592) are approved ministerially and entirely exempt from the California Environmental Quality Act (CEQA) or remain subject to CEQA but may move forward without a General Plan Amendment. The comment requests clarification on this point. The comment also states that certain provisions of the Natural Community Conservation Program/Habitat Conservation Plan (NCCP/HCP) are required to be amended into the General Plan upon issuance of the state and federal permits to ensure compliance with the terms of the NCCP/HCP.

The City's Essential Housing Program (Ordinance No. 592) requires that housing projects that are certified under the Program—and thereby able to take advantage of the streamlined review process—must comply with CEQA and other state laws prior to City consideration for approval. Refer to Ordinance No. 592, Sections 3 and 4(H)(2).

Ordinance No. 592 establishes the City's Essential Housing Program, which provides a streamlining tool for projects that demonstrate General Plan consistency and environmental excellence by meeting the stringent requirements of the City of Santee Essential Housing Project Credits Assessment Guide and Checklist.

Ordinance No. 592 specifically exempts compliant projects from needing to seek legislative approvals, which are known to delay housing, and expedites the City's review process. (Refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency; California Legislative Analyst Office, "California's High Housing Cost: Causes and Consequences," California Legislative Analyst Office 2015, pp. 13–17, 20, 35 [additional legislative acts and entitlements "delay and add to the cost of housing"]; Kok, Nils, Paavo Monkkonen and John M. Quigley, "Land Use Regulations and the Value of Land and Housing: An Intra-Metropolitan Analysis," 2014, Journal of Urban Economics 81[3]: 136–148 [greater number of discretionary reviews and approvals to obtain a building permit or a zone change results in higher land and housing prices, even after controlling for locational, geographic, and demographic characteristics.].)

Certification of an Essential Housing Project under the Essential Housing Program is a ministerial act based on whether a housing project meets the requirements of the City of Santee Essential Housing Project Credits Assessment Guide and Checklist (Appendix R, Essential Housing Ordinance, Sections E through H). Once certified, projects are processed by the City subject to expedited processing and must comply with CEQA and other state laws prior to approval (or denial) by the

appropriate City decision maker (Appendix R, Essential Housing Ordinance, Section 4[H][2], [I], [J]).

Ordinance 592, Section 4(H)(2), is explicit: "A proposed Housing Development Project that is certified as an Essential Housing Project shall be required to comply with CEQA and other state laws prior to project approval or denial. Further, the Director's determination will enhance, rather than degrade, existing environmental conditions by ensuring that a certified Essential Housing Project meets stringent environmental standards." Further, Ordinance No. 592, Section 3, explains:

> By enacting these policies and procedures, the City is not causing any alteration to the physical environment; and any certified project that satisfies these policies and procedures must still comply fully the CEQA, the CEQA Guidelines, and all other applicable laws and regulations before any development of any kind can proceed. Thus, CEQA compliance is assured. Further, the City's enactment of these policies and procedures will enhance, rather than degrade, existing environmental conditions by ensuring that any certified project demonstrate compliance with stringent environmental standards.
>
> The City also finds that choosing the precise time for CEQA compliance involves a balancing of competing factors. For example, CEQA recognizes that CEQA

> compliance should occur as project scope, design, features, and other factors and yet late enough to provide meaningful non-speculative information for environmental assessment. Accordingly, the City finds that by adopting this Ordinance, the City is not restricting itself from considering any feasible or reasonable choice of alternatives or mitigation measures for a certified project before completion of its CEQA compliance, nor committing itself to any definite course of action concerning a certified project prior to its CEQA compliance. Further, nothing herein restricts the City from denying a certified project on CEQA or other objective grounds.

(*Id.* [emphasis added.])

Consistent with Ordinance No. 592, the Recirculated Sections of the Final Revised EIR for the proposed project were revised and recirculated in compliance with CEQA to address the deficiencies identified in the trial court's ruling and to describe the changes to the requested discretionary approvals. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections.

To the extent the comment addresses the NCCP/HCP or inquires about the Essential Housing Program's application to other projects, the comment is not within scope of the Recirculated Sections of the Final Revised EIR and does not raise a significant environmental issue

regarding the adequacy or accuracy of information provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims, and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

S1-5: The comment states that the wildlife agencies look forward to developing a well-defined process to allow for wildlife agency review and feedback on projects proposed for NCCP/HCP coverage and encourages the City to develop a process that provides the public an opportunity to review and comment on projects addressed by the NCCP/HCP.

The comment is not within the scope of the Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Therefore, no further response is required.

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3. Fuel Modification Zones: Fuel modification zones (FMZs) are proposed as part of the Fanita Ranch development to provide buffers between wildfire fuels associated with existing vegetation that would remain on-site (e.g., within the proposed Preserve) and the proposed development structures. Additional FMZs are currently existing or proposed on the project site along existing development immediately offsite. The proposed project's FMZs would be extensive and include "code-exceeding" 115 to 165-foot-wide FMZs, up to 50 feet of roadside FMZ, and provisions for a 100-foot wide FMZ adjacent to neighboring residential areas to the south. The proposed FMZs would provide some separation from the unmaintained vegetation occurring outside the FMZs. As proposed, the landscape throughout the project and on its perimeter would be highly maintained, with much of it irrigated (all proposed zone 1 setback areas, common areas throughout the community and private yards). As proposed, the FMZs would include low-fuel, maintained vegetation, including 65 feet of irrigated zone, resulting in high vegetation moisture in these areas.

S1-6

Exotic Argentine ants likely do not occupy the vast majority of the project site currently, due to the natural dryness across most of the site and its location away from the immediate coast. Argentine ants are expected to invade large portions of the proposed Preserve if the project is implemented as proposed. Natural sites located within 200 meters of urban areas or artificial irrigation in coastal southern California are more likely to be invaded by Argentine ants, largely due to the artificial water resources provided by these land uses (Richmond *et al.* 2021). Within invaded sites, native ants are largely displaced by Argentine ants, and the species richness of native ants typically declines by more than 60 percent compared with uninvaded sites (Holway and Case 2000; Achury *et al.* 2021). In colonized areas, the Argentine ant drives substantial ecological changes in biodiversity, community structure, and ecosystem function (Charles and Dukes 2008; Lach 2008; Rodriguez-Cabal *et al.* 2009; Hanna *et al.* 2015), particularly in areas with a Mediterranean climate (Suarez *et al.* 2001, Holway *et al.* 2002) such as the project site. For example, case studies have reported that Argentine ants eliminated species of *Camponotus* ants that are highly important prey for the San Diego horned lizard (*Phrynosoma coronatum blainvillii*) (Suarez and Case 2002; Glenn and Holway 2008). Control of Argentine ants within natural areas in southern California is extremely difficult, in part because killing worker ants does little to control an Argentine ant colony, and because as few as 1.0 percent of a colony's foraging worker ants are able to provide sufficient food to support nestbound queens and larvae; additionally, finding an effective number of Argentine ant nests is very difficult and usually not practicable (Skaife 1955; UC Davis 2017). While the killing of Argentine ants is possible with pesticides, these pesticides can also have negative effects on native species (Buczkowski and Wossler 2019).

The applicant has proposed Argentine ant control measures as part of negotiations with the Wildlife Agencies for prospective NCCP and ESA section 10 permits for the proposed project. Control of Argentine ants in the natural areas (Preserve) of the project site within 200 meters of any artificial irrigation would likely need to be perpetual and ongoing. Further, eradication of Argentine ants within the areas adjacent to artificial irrigation is likely extremely difficult or

S1-6: The comment states that there would be a 65-foot irrigated zone within the proposed project's Fuel Modification Zones (FMZs). The comment states that Argentine ants do not occupy a vast majority of the project site and are expected to invade large portions of the Habitat Preserve if the proposed project is implemented as proposed. The comment discusses, generally, the negative effects that Argentine ants have on native ants, biodiversity, community structure, and ecosystem function, and the comment summarizes the difficulty in controlling Argentine ants. The comment acknowledges that the proposed Argentine ant control measures were discussed with the wildlife agencies. The comment recommends that irrigation be minimized within the FMZs to the extent compatible with public safety along the edge of the Preserve in order to reduce the ecological impact of Argentine ants within the proposed project's Habitat Preserve.

The comment correctly states that there would be a 65-foot irrigated zone within the FMZs. The irrigated FMZs cannot be reduced, as recommended in the comment, since it provides a necessary and required ignition-resistant buffer for the proposed project development from wildfires. However, water application is required to be efficient to irrigate plants while minimizing evaporation and runoff. In addition, various measures and best

management practices would be implemented to minimize runoff. Refer to Recirculated Sections, Section 3.8, Smart Growth and Sustainability Features, and Section 4.18.5.4, Threshold 5: Emergency Response and Evacuation Plans.

With respect to Argentine ants, the comment addresses biological resource issues that are not within scope of the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. The size of the irrigated zone within the proposed project's FMZs has not changed compared to what was analyzed in the Final Revised EIR. Any proposed project impact related to Argentine ants remains the same as before such that any concerns were required to be previously raised and are not currently at issue. (Ione Valley Land, Air, & Water Defense Alliance, LLC v. County of Amador (2019) 33 Cal.App.5th 165, 170–173, as modified (Mar. 20, 2019); Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th 1099, 1112, as modified (Apr. 9, 2004); Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal.App.4th 455, 480–481 ["any challenge to an EIR or other agency action arising from facts in existence before the entry of judgment must be asserted in the proceeding before the entry of judgment" and is precluded from being asserted in "post-judgment proceedings concerning compliance with the writ"].)

The Final Revised EIR evaluated potential impacts related to Argentine ants, including but not limited to the following:

- The Preserve Management Plan "includes habitat management requirements and activities known to benefit [Quino checkerspot butterfly], (i.e., . . . Argentine ant and invasive plant species removal . . .), based on the Draft Santee MSCP [Multiple Species Conservation Program] Subarea Plan and the USFWS [U.S. Fish and Wildlife Service] Recovery Plan for Quino checkerspot butterfly (March 2019 Draft Amendment)" (Appendix D, Biological Technical Report, Section 1.2 and Table 1-1).
- "Potential permanent indirect impacts to biological resources may also occur as a result of the proposed project through introduction of non-native species (e.g., Argentine ants [*Linepithema humile*])" (Appendix D, Biological Technical Report, Section 5.2).
- "Permanent indirect edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, unauthorized trail use, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., changes in surface and groundwater level and quality). Not only can altered hydrology directly affect special-status plants, increased moisture associated with irrigation and runoff can attract invasive Argentine ants

[*Linepithema humile*], which could displace native ants (e.g., harvester ants [*Messor* spp., *Pogonomyrmex* spp.]) that are potential pollinators and seed dispersers for special-status plants. . . . Control measures and quarterly monitoring of Argentine ants will occur along the construction–Habitat Preserve interface (MM-BIO-[11]) to reduce impacts to native ants so that the impact to special-status plant species would be less than significant" (Appendix D, Biological Technical Report, Section 5.2.2; see also, Final Revised EIR, Section 4.3.5).

- "Permanent indirect impacts to special-status wildlife species could occur from Argentine ants. Argentine ants are known to displace native insects that are the main prey base for many special-status wildlife species, and possibly help promote other non-native invertebrates such as earwigs and sowbugs, which could affect the Quino checkerspot butterfly. Control measures and quarterly monitoring of Argentine ants will occur along the construction–Habitat Preserve interface (MM-BIO-[11]) to reduce impacts to native ants so that the impact to special-status wildlife species would be less than significant" (Appendix D, Biological Technical Report, Section 5.2.3; see also Final Revised EIR, Section 4.3.5).
- "MM-BIO-11 **Argentine Ant Control and Monitoring**. Upon initiating construction, including landscaping within the development area, quarterly

monitoring by a qualified biologist shall be initiated for Argentine ants along the development–Habitat Preserve interface at sentinel locations where invasions could occur (e.g., where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the monitoring locations. Ant pitfall traps, bait sampling, or similarly appropriate sampling method will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures will be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to nest/mound insecticide treatment or available natural control methods being developed. A general reconnaissance of the infested area would also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, or collected water. Quarterly monitoring reports, as needed, shall be submitted to the City of Santee Development Services Department. Monitoring reports shall include remedial recommendations and issue resolution discussions when necessary. Monitoring and control of Argentine ants shall occur in perpetuity and shall be included in the Preserve Management Plan (included as Appendix P in the Biological Technical Report for the Fanita

Ranch Project). See Biological Technical Report for the Fanita Ranch Project, Appendix P, for additional details on monitoring methods and control of Argentine ants within the Habitat Preserve" (Final Revised EIR, Section 4.3).

- "Implementation of Mitigation Measure BIO-11 would reduce permanent indirect impacts to special-status plant and wildlife species from Argentine ants to a less than significant level. This measure requires control measures and quarterly monitoring of Argentine ants along the construction–Habitat Preserve interface" (Final Revised EIR, Section 4.3.5).
- See also, Final Revised EIR, Table 4.3-20, Multiple Species Conservation Program Consistency Analysis.

Thus, the Final Revised EIR acknowledged that Argentine ants can result in negative effects and therefore provided mitigation to reduce potential project impacts to less than significant. Refer to Final Revised EIR, Section 4.3, Biological Resources, Mitigation Measure BIO-11, and Appendix D, Biological Technical Report, for additional information. As acknowledged by the comment, the proposed project would implement monitoring and control measures, in perpetuity, to reduce impacts resulting from Argentine ants within the Habitat Preserve.

The revisions in the Recirculated Sections do not change the impact of the proposed project related to Argentine

ants and adopted control measures compared to what was evaluated in the Final Revised EIR. (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149, Fort Mojave Indian Tribe v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606.) At this stage of post-judgment corrective action, the interests of finality must take precedence. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481, Tiburon Open Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.) The impacts of the proposed project related to the impact evaluation and mitigation measures adopted to control and monitor Argentine ants are deemed to have been adequately addressed in the Final Revised EIR and are not currently at issue.

In any event, the City disagrees that Argentine ants are anticipated to invade a large portion of the Habitat Preserve if the proposed project is implemented as proposed. Argentine ants may already occur within the Habitat Preserve due to the surrounding development. In-perpetuity monitoring will be conducted within the Habitat Preserve to ensure Argentine ants do not spread further throughout the Habitat Preserve after project implementation. Furthermore, the proposed irrigated FMZs would not require high irrigation rates resulting in runoff or standing/ponded water, both of which can attract Argentine ants, as discussed above.

Further, the commenter does not disclose a recent paper by Couper et al. (2021) in Ecology.[1] This study in Northern California is the culmination of a 28-year effort that concluded that the distribution of Argentine ants on their preserve had shrunk as a result of climate change. They found that Argentine ant-occupied areas shrank by 30 percent between 1994 and 2020, and native ants expanded 70 percent during that time period. There is evidence to predict that Argentine ants will pose less of a problem as water control programs, targeted irrigation, and climate change occur in this region.

[1] Couper, L.I., N.J. Sanders, N.E. Heller, and D.M. Gordon. 2021. Multiyear drought exacerbates long-term effects of climate on an invasive ant species. Ecology 102(10):e03476. 10.1002/ecy.3476.

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S1-6 cont.

impossible, and effective control of Argentine ants is likely to be very difficult as well. Therefore, we recommend that such irrigation be minimized to the extent compatible with public safety along the edge of the Preserve. Any reduction of irrigation areas along the edge of the Preserve (including adjacent to proposed roads that would cross or share a boundary with natural areas) would likely result in a concomitant reduction in the ecological impacts of Argentine ants in the Preserve.

S1-7

4. Homeowner's Association (HOA) Roles: Per Appendix P1, responsibility for the monitoring, maintenance, enforcement, and funding of the FMZs would fall to the HOA. As currently contemplated in Fanita Ranch planning documents, the HOA will also have responsibility for overseeing management of the Fanita Ranch Preserve, Argentine Ant Control Plan, trail system maintenance, maintenance of private roads and fire protection systems, fuel modification and vegetation management, enforcement, landscape plan review/approval, and educational outreach on wildfire safety. The Wildlife Agencies are concerned that an HOA will not be able to effectively implement the numerous responsibilities envisioned by the Project. Likewise, the Wildlife Agencies request additional coordination with the City and project proponent to discuss the oversight of the HOA maintenance activities; assurances that will be in place in the event that the HOA does not fulfill the identified obligations; the process by which any disputes about the management or funding provided by the HOA will be resolved; and how the funds will be obligated and managed to complete the various tasks identified in the Fanita Ranch planning documents. Based on the uncertainties described above, the Wildlife Agencies have not yet agreed that this arrangement will satisfy the requirements of the NCCP/HCP.

S1-8

5. Avian Nesting Season Avoidance: Section 6.2.15 of Appendix P1 states that vegetation maintenance for fuel modification activities will occur throughout the year. Nests of all birds and raptors are protected under State laws and regulations, including Fish and Game Code, sections 3503 and 3503.5. Take or possession of migratory nongame birds designated in the Federal Migratory Bird Treaty Act of 1918 (Code of Federal Regulations, Title 50, § 10.13) is also prohibited under Fish and Game Code section 3513. In order to avoid impacts to nesting birds, we recommend that maintenance activities be scheduled and conducted outside of the avian breeding season (generally February 15–September 15).

The avoidance, minimization, and mitigation measures associated with the Project for nesting bird species will be identified in the final NCCP/HCP Subarea Plan and will be implemented accordingly.

S1-9

6. Subsequent CEQA/NEPA: We anticipate that aspects of the Project will undergo subsequent CEQA/NEPA analysis as a proposed hardline project under the NCCP/HCP Draft Subarea Plan. Please clarify if that is the expectation of the City.

S1-7: This comment discusses the role of the homeowners association (HOA) for monitoring, maintenance, enforcement, and funding of the FMZs and questions whether this arrangement would satisfy the NCCP/HCP. The comment is not within scope of Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Issues related to the proposed project's interplay with the NCCP/HCP Draft Subarea Plan are deemed to have been adequately addressed and resolved in connection with the prior Final Revised EIR certification and litigation and are not currently at issue in the Recirculated Sections.

S1-8: The comment notes that vegetation maintenance for fuel modification activities will occur throughout the year and recommends that such activities be scheduled and conducted outside the avian breeding season. The comment also states that "avoidance, minimization, and mitigation measures associated with the Project for nesting bird species will be identified in the final NCCP/HCP Subarea Plan and will be implemented accordingly."

The comment is not within scope of Recirculated Sections and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. The vegetation maintenance for fuel management activities referenced in Appendix P1, Wildland Fire Evacuation Plan, of the Recirculated Sections and summarized in Section 3.6 have not changed compared to what was analyzed in the Final Revised EIR. Specifically:

> Vegetation maintenance would occur throughout the year and would be monitored and enforced by the HOA. Property owners and private lot owners would be responsible for vegetation management on their lots in compliance with the FPP [Fire Protection Plan]. The HOA would hire a third-party FMZ inspector and a third-party landscape plan reviewer to ensure that the required fuel reduction work occurs and the FMZs remain functional. The third-party FMZ inspector and landscape plan reviewer would prepare reports twice per year (June and late September) that document the functional condition of all HOA-maintained property and provide the reports to the HOA and the SFD [Santee Fire Department]. If the findings in a report indicate that any of the HOA-maintained properties are out of compliance,

then the HOA would be responsible to bring the property into compliance. The HOA would hire an Approved Maintenance Entity (AME) to perform the maintenance in all HOA- maintained property.

(Refer to Recirculated Sections, Section 3.6, *compare,* Final Revised EIR, Section 3.6.1).

Further, the Final Revised EIR described nesting season avoidance Mitigation Measure BIO-14 and that implementation of the Fire Protection Plan would reduce indirect impacts to sensitive species by minimizing potential exposure to fire hazards (Mitigation Measure BIO-21) (Final Revised EIR, Section 4.3.5). The Final Revised EIR also describes the consistency with the Draft MSCP Subarea Plan in Section 4.3.5.6 and the First Errata, Section 4.2.5.

There are no changes to the proposed project's vegetation maintenance for fuel management such that alter proposed project impacts to bird species would be unchanged compared to the review in the Final Revised EIR. Thus, avian nesting season avoidance is deemed to have been resolved in connection with the prior Final Revised EIR certification and litigation and is not currently at issue in the Recirculated Sections. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481; Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149; Fort Mojave Indian Tribe

v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606; Tiburon Open Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.) (Ibid.) No further response is required.

S1-9: The comment states requests clarification regarding whether the proposed project will undergo subsequent CEQA/National Environmental Policy Act analysis as a proposed hardline project under the NCCP/HCP Draft Subarea Plan.

The comment is not within scope of Recirculated Sections of the Final Revised EIR and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections. Please refer to Section 0.1, Summary, in Chapter 0, Preface, of the Recirculated Sections and Thematic Response 1 – Recirculation and Scope of Review Claims. Issues related to the proposed project's interplay with NCCP/HCP Draft Subarea Plan are deemed to have been adequately addressed and resolved in connection with the prior Final Revised EIR certification and litigation and are not currently at issue in the Recirculated Sections. (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481; Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149; Fort Mojave Indian Tribe v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605–1606; Tiburon Open

Space Committee v. County of Marin (2022) 78 Cal.App.5th 700, 752.)

For informational purposes only, the City refers the commenter to Final Revised EIR, Section 4.3, Biological Resources (Sections 4.3.5.6 and 4.3.6.6), and First Errata, Section 4.2.5, which discuss the origin and status of the Draft MSCP Subarea Plan, the proposed project's consistency with the Draft MSCP Subarea Plan, and relationship between Section 7 and Section 10 approvals. See also, Recirculated Sections, Section 3.12, Discretionary Actions, which describes the additional approvals, permits, licenses, certifications, or other entitlements that the proposed project may require from various federal, state, and local agencies, which are unchanged from the Final Revised EIR.

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S1-10

The Wildlife Agencies have worked with the City and the proposed Fanita Ranch project proponent to reach the goal of issuance of a NCCP/HCP. The many years of collaboration has included the City receiving two section 6 grants to support the City in achieving the NCCP/HCP. We appreciate the opportunity to comment on the EIR and look forward to our continued collaboration in developing the City's Subarea Plan. If you have questions or comments regarding this letter, please contact Heather Schmalbach[1] of the Department at 858-637-5511 or Jon Avery[2] or Mary Beth Woulfe[3] of the Service at 760-431-9440.

Sincerely,

JONATHAN SNYDER Digitally signed by JONATHAN SNYDER Date: 2022.07.25 14:25:29 -07'00'

Jonathan Snyder
Assistant Field Supervisor
U.S. Fish and Wildlife Service

DocuSigned by: Karen Drewe AFE95ACEC486469...

for David Mayer
Environmental Program Manager
California Department of Fish and Wildlife

cc:
State Clearinghouse, Sacramento, State.Clearinghouse@opr.ca.gov
David Mayer, CDFW, David.Mayer@wildlife.ca.gov
Karen Drewe, CDFW, Karen.Drewe@wildlife.ca.gov
Heather Schmalbach, CDFW, Heather.Schmalbach@wildlife.ca.gov
Jonathan Snyder, USFWS, Jonathan_D_Snyder@fws.gov
Marni Borg, City of Santee, mborg@cityofsanteeca.gov

[1] Heather.Schmalbach@wildlife.ca.gov.
[2] jon_avery@fws.gov.
[3] marybeth_woulfe@fws.gov.

S1-10: This comment states the many years of collaboration between the wildlife agencies and the City and provides contact information for questions on this comment letter. This is a concluding paragraph and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter S2: California Department of Transportation, July 25, 2022

S2

From: Dodson, Kimberly@DOT
To: Chris Jacobs
Cc: Eaton, Maurice A@DOT; State.Clearinghouse@opr.ca.gov
Subject: Recirculated Sections of Final Revised EIR for Fanita Ranch SCH# 2005061118
Date: Monday, July 25, 2022 3:52:36 PM
Attachments: SD_VAR_VAR_Fanita_Ranch_Recirculated_FEIR_07-25-2022.pdf

Hi Chris,
Please see the attached comment letter.
Thank you,
Kimberly D. Dodson, GISP, M. Eng.
Associate Transportation Planner
Caltrans District 11 LDR Branch
4050 Taylor St., MS-240
San Diego, CA 92110
Kimberly.Dodson@dot.ca.gov
Telework phone: 619-985-1587

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
(619) 709-5152 | FAX (619) 688-4299 TTY 711
www.dot.ca.gov

July 25, 2022

11-SD-52, 67, 125
PM VAR
Fanita Ranch
Recirculated Sections of Final Revised EIR/SCH#2005061118

Mr. Chris Jacobs
Principal Planner
City of Santee
10601 Magnolia Ave.
Santee, CA 92071

Dear Mr. Jacobs:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Recirculated Sections of Final Revised EIR for the Fanita Ranch Project located near State Route 52 (SR-52), State Route 67 (SR-67) and State Route 125 (SR-125). The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

S2-1

Safety is one of Caltrans' strategic goals. Caltrans strives to make the year 2050 the first year without a single death or serious injury on California's roads. We are striving for more equitable outcomes for the transportation network's diverse users. To achieve these ambitious goals, we will pursue meaningful collaboration with our partners. We encourage the implementation of new technologies, innovations, and best practices that will enhance the safety on the transportation network. These pursuits are both ambitious and urgent, and their accomplishment involves a focused departure from the status quo as we continue to institutionalize safety in all our work.

Caltrans is committed to prioritizing projects that are equitable and provide meaningful benefits to historically underserved communities, to ultimately improve transportation accessibility and quality of life for people in the communities we serve.

We look forward to working with the City of Santee in areas where the City and Caltrans have joint jurisdiction to improve the transportation network and connections

"Provide a safe and reliable transportation network that serves all people and respects the environment"

S2-1: This comment describes the role and mission of the California Department of Transportation (Caltrans) and looks forward to working with the City in joint-jurisdiction areas. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S2-1 cont.

between various modes of travel, with the goal of improving the experience of those who use the transportation system.

Caltrans has the following comments:

System Planning

S2-2

- Caltrans and SANDAG are completing two Comprehensive Multimodal Corridor Plans (CMCP) for SR-52 ("Coast Canyons and Trails") and SR-67 ("San Vicente") anticipated to be complete by Fall, 2022. These highways are identified as evacuation routes in Section 4.1 of the Wildland Fire Evacuation Plan. The scope of the CMCPs touch on the Fanita Ranch project and may require additional coordination with Caltrans and SANDAG on these efforts.

S2-3

- Both CMCPs emphasize a need for improved evacuation connections between highways and local roadways to enable ingress and egress during emergencies in high-risk areas in and around Fanita Ranch. Notably for Sections 1.2 and 4.1 of the Wildland Fire Evacuation Plan, the San Vicente CMCP is exploring similar options to introduce short and mid-term solutions related to the installation of emergency message systems, push notifications, variable message signage, CCTV infrastructure, and improved fire road access. Long-term solutions include shoulder widening along SR-67.
- The San Vicente CMCP will also support the selected alternative of the SR-67 Highway Improvements Project, which is projected to conclude in June of 2025, as the primary recommendation to increase evacuation capacity. This alternative is intended to create the necessary evacuation lanes, as will be determined by the final study.

S2-4

- Cuyamaca Street and Magnolia Avenue are key connecting arterials identified in the Coast Canyons and Trails CMCP. Currently, proposed evacuation solutions and strategies have not been identified. However, these arterials will be under evaluation as the plan is developed. Additional consultation between the City of Santee, SANDAG and Caltrans District 11 may be required.

Sustainability

S2-5

Please continue to work with Caltrans District 11 regarding wildfire evacuation discussions and planning for transportation projects and transportation corridors (underway). This large development appears to have many beneficial fire mitigations (i.e. additional fire station(s), community education and preparedness, defensible space, and fire resistant structures) but will still increase the population of the area that would ultimately use the transportation network daily and in the event of an emergency.

S2-2: This comment states that Caltrans and the San Diego Association of Governments (SANDAG) are completing two Comprehensive Multimodal Corridor Plans (CMCP) for State Route (SR-) 52 and SR-67, which are identified as evacuation routes in the Wildland Fire Evacuation Plan (Appendix P2) and may require additional agency coordination. The City looks forward to continued coordination with Caltrans regarding the CMCP for SR-52.

S2-3: This comment states the CMCP emphasizes a need for improved evacuation connections between highways and local roadways to enable ingress and egress during emergencies in high-risk areas in and around the project site and discusses the San Vicente CMCP for improvements to SR-67. The City supports Caltrans' efforts to improve evacuation safety and efficiency.

S2-4: This comment states Cuyamaca Street and Magnolia Avenue are key connecting arterials identified in the Coast Canyons and Trails CMCP, which may require additional consultation between the City, Caltrans, and SANDAG. The City is available to consult with SANDAG and Caltrans regarding its Coast Canyons and Trails CMCP.

S2-5: This comment requests the City continues to work with Caltrans District 11 regarding wildfire evacuation and planning for transportation projects and transportation corridors. The City will continue to work with Caltrans

Complete Streets and Mobility Network

Caltrans views all transportation improvements as opportunities to improve safety, access and mobility for all travelers in California and recognizes bicycle, pedestrian and transit modes as integral elements of the transportation network. Caltrans supports improved transit accommodation through the provision of Park and Ride facilities, improved bicycle and pedestrian access and safety improvements, signal prioritization for transit, bus on shoulders, ramp improvements, or other enhancements that promotes a complete and integrated transportation network. Early coordination with Caltrans, in locations that may affect both Caltrans and the City of Santee is encouraged.

S2-6

To reduce greenhouse gas emissions and achieve California's Climate Change target, Caltrans is implementing Complete Streets and Climate Change policies into State Highway Operations and Protection Program (SHOPP) projects to meet multi-modal mobility needs. Caltrans looks forward to working with the City to evaluate potential Complete Streets projects.

Bicycle, pedestrian, and public transit access during construction is important. Mitigation to maintain bicycle, pedestrian, and public transit access during construction is in accordance with Caltrans' goals and policies.

Land Use and Smart Growth

Caltrans recognizes there is a strong link between transportation and land use. Development can have a significant impact on traffic and congestion on State transportation facilities. In particular, the pattern of land use can affect both local vehicle miles traveled and the number of trips. Caltrans supports collaboration with local agencies to work towards a safe, functional, interconnected, multi-modal transportation network integrated through applicable "smart growth" type land use planning and policies.

S2-7

The City should continue to coordinate with Caltrans to implement necessary improvements at intersections and interchanges where the agencies have joint jurisdiction.

Environmental

Caltrans welcomes the opportunity to be a Responsible Agency under the California Environmental Quality Act (CEQA), as we have some discretionary authority of a portion of the project that is in Caltrans' R/W through the form of an encroachment permit process. We look forward to the coordination of our efforts to ensure that

S2-8

regarding wildfire evacuation and planning for transportation projects and corridors. The City agrees that the proposed project contains many features beneficial to fire safety and education.

S2-6: This comment generally describes Caltrans' mission with regard to complete streets and mobility. As noted previously, the City will continue to work closely with Caltrans to achieve the mutual goals of the agencies. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S2-7: This comment generally describes Caltrans' mission with regard to land use and smart growth. As noted previously, the City will continue to work closely with Caltrans to achieve the mutual goals of the agencies. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S2-8: This comment states that Caltrans' role as a Responsible Agency and looks forward to coordinating with the City through its encroachment permit process. The City is available to meet with Caltrans at its convenience.

S2-8 cont. Caltrans can adopt the alternative and/or mitigation measure for our R/W. We would appreciate meeting with you to discuss the elements of the EIR that Caltrans will use for our subsequent environmental compliance.

S2-9 An encroachment permit will be required for any work within the Caltrans' R/W prior to construction. As part of the encroachment permit process, the applicant must provide approved final environmental documents for this project, corresponding technical studies, and necessary regulatory and resource agency permits. Specifically, CEQA determination or exemption. The supporting documents must address all environmental impacts within the Caltrans' R/W and address any impacts from avoidance and/or mitigation measures.

We recommend that this project specifically identifies and assesses potential impacts caused by the project or impacts from mitigation efforts that occur within Caltrans' R/W that includes impacts to the natural environment, infrastructure including but not limited to highways, roadways, structures, intelligent transportation systems elements, on-ramps and off-ramps, and appurtenant features including but not limited to lighting, signage, drainage, guardrail, slopes and landscaping.

S2-10 **Broadband**

Caltrans recognizes that teleworking and remote learning lessen the impacts of traffic on our roadways and surrounding communities. This reduces the amount of VMT and decreases the amount of greenhouse gas (GHG) emissions and other pollutants. The availability of affordable and reliable, high speed broadband is a key component in supporting travel demand management and reaching the state's transportation and climate action goals.

S2-11 **Right-of-Way**

- Per Business and Profession Code 8771, perpetuation of survey monuments by a licensed land surveyor is required, if they are being destroyed by any construction.
- Any work performed within Caltrans' R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans' R/W prior to construction.

Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (619) 688-6158 or emailing D11.Permits@dot.ca.gov or by visiting the website at https://dot.ca.gov/programs/traffic-operations/ep. Early coordination with Caltrans is strongly advised for all encroachment permits.

S2-9: This comment describes the encroachment permit process and recommends that the proposed project identifies and assesses potential impacts caused by the proposed project or impacts from mitigation efforts that occur within Caltrans' right-of-way. The City acknowledges the jurisdiction of Caltrans and its permitting process. The City's environmental review of the proposed project addresses all potentially significant impacts, both on and off site.

S2-10: This comment generally addresses broadband and the state's transportation and climate action goals. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S2-11: This comment describes the requirements for work within Caltrans' jurisdiction. Comment is noted. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

S2-12 If you have any questions or concerns, please contact Kimberly Dodson, LDR Coordinator, at (619) 985-1587 or by e-mail sent to Kimberly.Dodson@dot.ca.gov.

Sincerely,

Maurice A. Eaton

MAURICE EATON
Branch Chief
Local Development Review

"Provide a safe and reliable transportation network that serves all people and respects the environment"

S2-12: This comment provides contact information for questions regarding this comment letter. This is a concluding statement and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter L1: County of San Diego, July 11, 2022

L1

From: Waters, Sue
To: Chris Jacobs
Cc: Ippolito, Sharon; Vertino, Timothy; Peraza, Marcos
Subject: RECIRCULATED SECTIONS OF THE FINAL REVISED EIR FOR FANITA RANCH PUBLIC COMMENT FROM THE COUNTY OF SAN DIEGO
Date: Monday, July 11, 2022 10:21:05 AM
Attachments: FanitaRanch Revised EIR7.11.22.pdf

The County of San Diego would like to comment on the proposed improvements and connections to the streets maintained by the County of San Diego. Please see attached comment letter.

Thank you,

Sue Waters

County of San Diego

Land Use/Environmental Planner III
Environmental Services Unit
5510 Overland Avenue, Ste. 410
San Diego, CA 92123-1239
(858) 694-3918
Mail Stop O-332

County of San Diego

JEFF C. MONEDA
DIRECTOR

DEPARTMENT OF PUBLIC WORKS
5510 OVERLAND AVENUE, SUITE 410
SAN DIEGO, CA 92123-1237
(858) 694-2212
www.sdcounty.ca.gov/dpw/

July 11, 2022

City of Santee
Attn: Chris Jacobs, Principal Planner
Department of Development Services City Hall, Building 4
10601 Magnolia Avenue
Santee, California 9I2071

RE: RECIRCULATED SECTIONS OF THE FINAL REVISED EIR FOR FANITA RANCH PUBLIC COMMENT FROM THE COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS.

The County of San Diego would like to comment on the proposed improvements and connections to the streets maintained by the County of San Diego:

L1-1 *"If any of the County maintained roads are trench/cut within 3 years after the road is resurfaced, there will be a violation of the County's Cut Policy and will be required to resurface the full width of the road with the same treatment. Please coordinate with Lawrence Hirsch, Utility Coordinator, for any updates or questions at (858) 694-2215 or at lawrence.hirsch@sdcounty.ca.gov. "*

Sincerely,
Sue Waters
Land Use Environmental Planner
County of San Diego
Department of Public Works

Cc: Sharon Ippolito, County of San Diego, Dept. Planning and Land Use

L1-1: This comment states that if County-maintained roads are trench/cut within 3 years after the road is resurfaced, the City will be required to resurface the full width of the road with the same treatment, consistent with the County's Cut Policy. This comment is noted. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter O1: San Diego Gas & Electric, July 21, 2022

O1

From: Craig, Eric D
To: Marni Borg
Cc: Becker, Kevin C; Ritter, John
Subject: Street Extensions for Fanita Ranch SR 486598
Date: Thursday, July 21, 2022 11:54:25 AM
Attachments: Fanita Ranch VTM Final 03-26-20 sheet 24 Proposed markups Z200682.pdf

O1-1

Hi Marni,
I work for SDG&E in the Land Services Department and was recently asked to review the proposed extension of Magnolia Avenue north through SDG&E's overhead transmission easement. After reviewing the attached sheet from the Fanita Ranch VTM, I realized the project will also extend Cuyamaca Street through the easement. Besides the paved streets, the map also indicates storm water improvements, wet utilities, street lights, etc.

O1-2

The proposed street extensions and associated improvements constitute an encroachment upon SDG&E's easement. Pursuant to Section 851 of the Public Utilities Code, such encroachments require approval of the California Public Utilities Commission through the Advice Letter process. Copied on this email is my colleague Kevin Becker. Kevin will be handling preparation of the Advice Letter, and ensuring that the conditions of the Advice Letter are met prior to construction of the proposed improvements. As part of his review Kevin will coordinate a conflict check of the proposed grading and improvement plans by our operational and engineering teams.
In order to prepare the Advice Letter, SDG&E will require additional information, including:

- Title reports for the affected properties
- A copy of the approved CEQA document (and probably a supplemental memo specifically describing the proposed encroachments upon the SDG&E easement)
- Detailed grading and improvement plans which depict all SDG&E easements and facilities as well as all proposed encroachments
- An appraisal from an SDG&E-approved appraiser

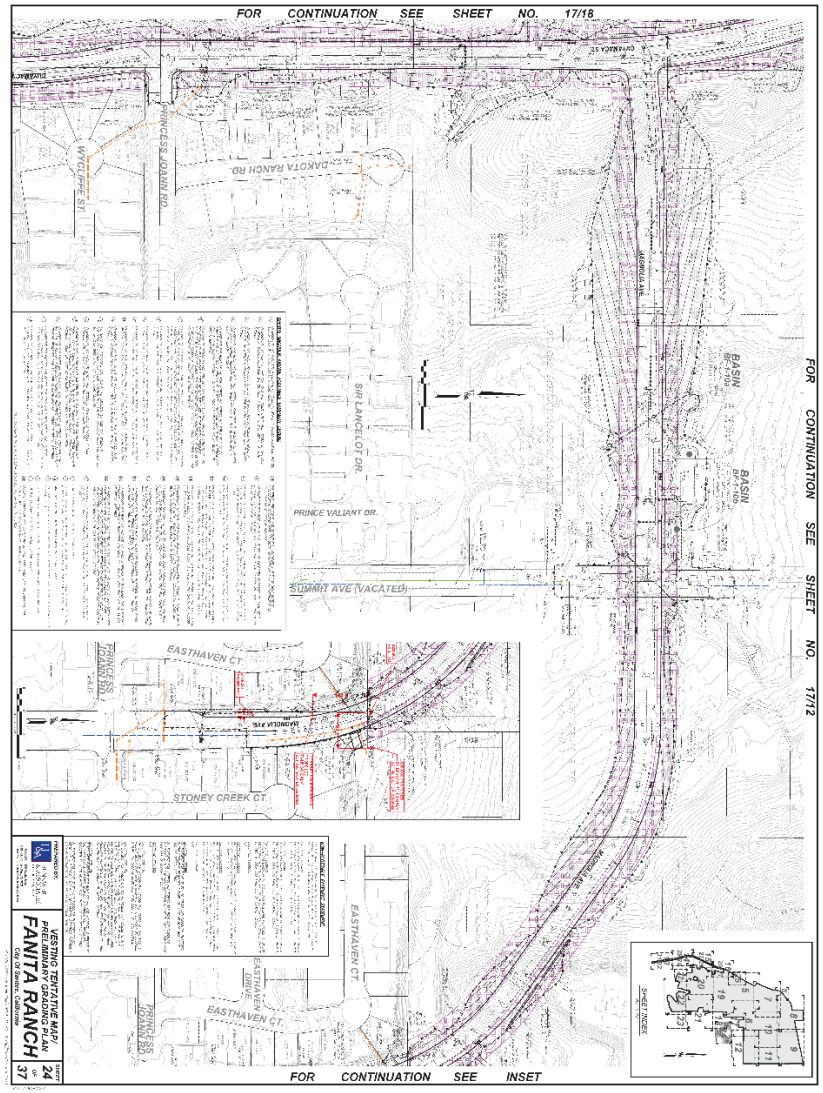
The Advice Letter will likely require a consent agreement documenting the exact nature and conditions of any approved encroachments. The draft consent agreement will be included with the Advice Letter filing and both parties will sign after the CPUC approves the Advice Letter. Please know that approval of the Advice Letter is completely at the discretion of the CPUC, and the timing of the process is outside SDG&E's control after the request is filed. Moving forward please coordinate with Kevin, and please reference the SR 486598 in future emails. Lastly, please be advised that SDG&E is no longer signing Joint Use Agreements for public street improvements in our utility easements. We are available to meet and discuss the project in greater detail with City staff and representatives of Fanita Ranch.

O1-3

Eric Craig
San Diego Gas & Electric
Land Management Representative
Eastern District
619.676.0119 office
619.219.9845 mobile

O1-1: This comment introduces the letter and states that the proposed project will extend both Magnolia Avenue and Cuyamaca Street through San Diego Gas & Electric's (SDG&E's) overhead transmission easement. This comment also refers to an attachment map showing this easement. The City confirms that these extensions will pass through SDG&E's easement. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

O1-2: This comment states that the proposed street extensions and associated improvements would encroach on SDG&E's easement and will require California Public Utilities Commission approval through the Advice Letter process. The comment further describes the requirements of the Advice Letter process. The City and applicant will coordinate on the Advice Letter process with SDG&E and the California Public Utilities Commission. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.



O1-3: This comment provides SDG&E contact information to coordinate on the Advice Letter process, states that SDG&E is no longer signing Joint Use Agreements for public street improvements and utilities, and invites City staff to discuss the proposed project. The City appreciates the opportunity to coordinate with SDG&E on the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter O2: Preserve Wild Santee July 24, 2022

O2

From: Save Fanita
To: Chris Jacobs
Subject: Fanita Ranch FREIR Comment Letter
Date: Sunday, July 24, 2022 4:05:34 PM
Attachments: Fanita Ranch Final Revised EIR Comments July 24 2022 F.pdf

Dear Mr. Jacobs,

My letter on the Final Revised Fanita Ranch Environmental Impact Report is attached.

Exhibits 1-34 will follow in 7 separate emails.

Please confirm receipt of the letter 7 subsequent emails with exhibit attachments.

Thank you,
Van Collinsworth

Preserve Wild Santee

July 24, 2022

Chris Jacobs, Principal Planner
City of Santee Department of Developers
10601 Magnolia Avenue
Santee, CA 92071
cjacobs@cityofsantee.ca.gov

RE: Fanita Ranch Final Revised EIR (SCH# 2005061118)

O2-1

Dear Mr. Jacobs,

Please include the following comments in the Administrative Record.

Notice of Availability & Project Description Section 3.0

Why did the city wait to Recirculate the Revised EIR / open the public comment period until one day after the Santee City Council voted to rescind its decision to place the Fanita Ranch Project Referendum on the November 8, 2022 ballot?

O2-2

Why has the required "Concurrent Preparation of the Administrative Record" lacked and still lack **public notice** for consideration of:

1. Notice Of Exemption (NOE) for Fanita Ranch…EHP2021-1 received by the State Clearinghouse 12/28/21 ?
2. Fanita Ranch…EHP2021 Essential Housing Program Application December __ 2021 [3-85] ?
3. Urgency Ordinance 592 ?

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O2-1: This comment requests the following comments be included in the administrative record. The City acknowledges all comment letters received during the public review period will be included in the administrative record. No further response is required.

O2-2: This comment inquires regarding the timing of release for public review and comment of the Recirculated Sections. The public review period commenced following the City's compliance with all applicable legal requirements for the content of the recirculated materials and after providing proper public notice in accordance with statutory requirements. With regard to the portion of the comment questioning the content of the administrative record, all of the documents listed in the comment are included in Appendix R to the Recirculated Sections and are incorporated into the record at the following locations: (i) the Notice of Exemption (NOE) at tabs G(10) 1 [Filed with County of San Diego] and G(10) 2 [Filed with Office of Planning and Research]; (ii) the Essential Housing Program application at (G)(1) Project Application Documents, tabs 1 and 2; (iii) Ordinance No. 592 at (G)(2), tab 9. The comment requests the "public notice" for each of these documents. Initially, the NOE is itself a public notice. Next, the filing of an Essential Housing Program application does not trigger any public notice requirement. Finally, Urgency Ordinance No. 592 has already been adopted by the City Council following a

properly noticed public hearing. The adoption of Urgency Ordinance No. 592 was not a discretionary act for consideration by the City Council in connection with Fanita Ranch. Consequently, while the City's adoption of Urgency Ordinance No. 592 was subject to proper public notice, the public notice for adoption of the Ordinance was not included in the Fanita Ranch administrative record. However, the City has no objection to its inclusion, and that public notice may now be found in the "Miscellaneous" section of the administrative record. The comment expresses opposition to Urgency Ordinance No. 592 and the NOE filed pursuant to CEQA in connection with City staff certification of the Fanita Ranch project as an essential housing project such that it may be processed pursuant to Essential Housing Program's streamlining provisions. The City refers the commenter to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, as well as Thematic Response 2 – Referendum and Measure N Applicability.

O2-2 cont. Preserve Wild Santee strenuously objects to the Fanita project NOE and Urgency Ordinance 592 as unethical and illegal. We request revision and recirculation of the EIR consistent with the law. The above elaborate scheme to deprive Santee residents of their authority to vote on the project must fail.

City of Santee's illegal attempt to disenfranchise resident voters utilizing Ordinance 592 / Notice of Exemption (NOE) Fanita Ranch…EHP2021-1

The intent to approve the 2,949-3,008-unit Fanita Ranch subdivision by a unilateral ministerial act is blatantly unconstitutional and illegal.

Upon what authority does the city intend to preempt the Measure N voting requirement and the Santee General Plan with a ministerial approval of the project?

O2-3 Constitution of the State of California, Article II, Section 1.
All political power is inherent in the people. *Government is instituted for their protection, security, and benefit, and they have the right to alter or reform it when the public good may require.*

The people of Santee overwhelmingly rejected a 3,000-unit project on Fanita Ranch by a 2/3 landslide. The people qualified a second Referendum on the current 3,000-unit project. The people passed initiative to provide voters the ultimate authority on similar sized projects in violation of the Santee General Plan without the need to qualify future Referendums.

The Constitution of the State of California vests land use authority in the people. It is insidious and illegal to willfully seek means to evade the people's authority on the Fanita Ranch development proposal utilizing Ordinance 592 and Notice of Exemption (NOE) EHP2021-1.

Urgency Ordinance 592 & Discretionary Actions 3.12:

O2-4 Ordinance 592 is not needed and is insidious. It's sole impact and primary purpose is the ability to approve a 3,000-unit luxury subdivision in a Very High Fire Hazard Severity Zone by usurping the authority of the people vested within them by the

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O2-3: This comment repeats the previous comment and lodges objections to Urgency Ordinance No. 592 and the NOE filed by the City pursuant to CEQA in connection with City staff certification of the proposed project as an essential housing project such that it may be processed pursuant to Essential Housing Program's streamlining provisions. The City refers the commenter to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, as well as Thematic Response 2 – Referendum and Measure N Applicability. Finally, the comment incorrectly states that the proposed project will be considered for approval through a ministerial process. This is incorrect. Qualification for the Essential Housing Program is a ministerial process (see Urgency Ordinance No. 592); however, the proposed project application is discretionary in nature and the proposed project will be required under the Ordinance to comply with applicable hearing and CEQA requirements prior to consideration by City Council

O2-4: This comment expresses opposition to Urgency Ordinance No. 592 and suggests its sole impact and primary purpose is related to the proposed project. The adoption of Urgency Ordinance No. 592 was well supported by facts and findings establishing a housing crisis in the City and state; was adopted following a properly noticed public hearing approximately one year ago (August 2021); and is currently in effect. It is not a discretionary act subject to

constitutions of the State of California and United States. The ordinance is a reckless attack on democracy.

The residents of Santee incorporated in 1980 primarily to provide local regulative authority of land use and development. **The history of land use and development decisions in Santee illustrates the lack of necessity for an urgency declaration by the current developer-corrupted city council.**

O2-4 cont.

Incorporation and engagement of Santee residents in a local CEQA process has made Santee one of the most affordable and highly desirable places to live in San Diego County. Since incorporation in 1980, with the exception of Fanita Ranch and Rattlesnake Mountain Specific Plan Areas (SPAs), every housing application in Santee, both in and out of Very High Fire Hazard Severity Zones (VHFHSZs) has been approved without a CEQA challenge court hearing. Only Fanita Ranch has been subjected to successful referendums and CEQA challenges.

There is no legitimate rationale for usurping the land use power vested in the people.

Rebuttal to Ordinance 592 findings:

- With the exception of Fanita Ranch, there has not been any "delay" of housing production executed by the power vested in the people of Santee.
- City housing is diverse and among the most affordable and desirable of jurisdictions within San Diego County. [Table 17: Medium Home Sales Prices 2015 and 2020, Santee Housing Element 2021-2029, p. 24]

O2-5

- "Cost burdens" are ubiquitous nationwide and are locally undefined by the Ordinance in Santee. Nationwide marginalization of living wages exacerbated by corrupted and inflationary monetary policies are the true sources of household "cost burden." Approval of a massive luxury subdivision does not address the needs of marginalized citizens. The "urgency" argument diverts from and exacerbates marginalized citizens' plight by further eroding democratic process and institutional trust.
- Housing prices rise inordinately due to the over production and concentration of luxury housing which in itself perpetuates higher prices. Developers and

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consideration by the City Council in connection with the proposed project. Further, as explained in Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, at least two other projects have taken advantage of the program to date: the Santee Town Center (100 units), and Mission Gorge Road Condominiums (96 units). Please also refer to response to comment O2-3.

O2-5: This comment expresses opposition to Urgency Ordinance No. 592 and provides a list of rebuttal claims. The adoption of Urgency Ordinance No. 592 is not a discretionary act subject to consideration by the City Council in connection with the proposed project. It was adopted by the City Council in August 2021 following a properly noticed public hearing. Please refer to responses to comments O2-3 and O2-4 and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

home owners will charge as much as the market will pay for their product/ property regardless of any subsidies that may reduce their costs.

- All housing requires reinvestment and maintenance as governed by the laws of physics/thermodynamics. Stripping citizens of their authority to defend their quality-of-life from significant adverse environmental impacts removes citizen incentive to maintain and reinvest in existing housing stock. Age of housing is not consequential in a homes adequacy.
- Building new housing does not generate maintenance improvements to existing housing. The two classes are distinct. A homeowners newfound ability to abandon existing housing can actually discourage reinvestment in their existing homes/neighborhoods.
- Santee civil servants are paid well enough to locate in more expensive locations outside of Santee if they so choose and many have done so. Santee is one of the most affordable jurisdictions in San Diego County. [Table 17] Numerous subdivisions were built over the past two decades and more are currently under construction.
- City bureaucracy has become addicted to short-term infusions of developer fees despite the cost burden of providing essential services to residential units over the long-term. It is commercial development that provides revenue stability to a General Fund.

O2-5 cont.

Rational for adoption of Ordinance 592 is inadequately supported. Evidence contradicts 592 as being political theater.

Ordinance 592 **falsely cites a Regional Housing Needs Assessment (RHNA) assignment of 3,660-units.** The Santee Housing Element correctly contradicts Ordinance 592 in Table 34: RHNA Housing Needs for 2021-2029, p. 65, with an RHNA allocation of only 1,219 units. "Affordable" Low Income categories total 603 of those 1,219-units and would not be built by the Fanita Ranch luxury subdivision. [Table 35: RHNA Credits and Remaining Need]

O2-6

The Santee fair share of regional housing need has fallen - not risen - directly contradicting the false flag arguments of Ordinance 592 used to justify usurping the people's land use authority.

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O2-6: This comment expresses opposition to Urgency Ordinance No. 592 in connection with the City's Regional Housing Needs Assessment (RHNA). The adoption of Urgency Ordinance No. 592 is not a discretionary act subject to consideration by the City Council in connection with the proposed project. It was adopted by the City Council in August 2021 following a properly noticed public hearing. Please refer to response to comment O2-3 and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

O2-6 cont.

The City was aware of the correct RHNA calculation when the Ordinance was drafted, yet chose to utilize an outdated higher regional needs allocation to weakly support its unconstitutional Ordinance 592 and Fanita Ranch NOE **EHP2021-1.**

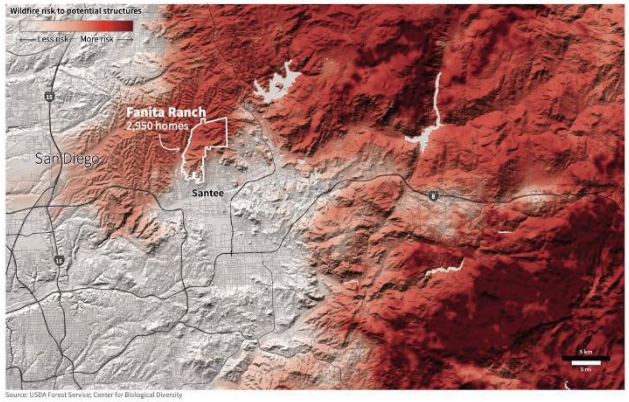
O2-7

The Final REIR fails to, but must, disclose the Fanita project's inconsistencies with the Land Use Element of the Santee General Plan. The REIR must fully disclose all approvals required for the project including the voting requirement of Measure N.

Considering the voting requirement of Measure N, why does the Project Description, p. 3-82 anticipate beginning construction in 2023? How is a 2023 construction date substantiated? Unsubstantiated projections should be stricken.

O2-8

Construction of luxury housing in a severe fire hazard zone is not essential nor urgent. Public safety and respect for land use law is essential. Section 3.12 Discretionary Actions must be revised to meet legal standards.



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O2-7: This comment asserts that the proposed project is inconsistent with the Land Use Element of the Santee General Plan and that the public should vote on Measure N. The comment further questions the project's 2023 construction start date. The City refers the commenter to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, as well as Thematic Response 2 – Referendum and Measure N Applicability. The 2023 construction date is the earliest date that construction could reasonably begin were the proposed project to be approved in 2022.

O2-8: This comment asserts housing in a severe fire hazard zone is not essential and states climate change increasing wildfires on the project site were not addressed. The commenter's concern regarding fire hazard severity zone is noted. However, a designation as a very high fire hazard severity zone does not preclude development. Rather, it requires a higher standard of fire protection, similar to a seismic hazard area requiring higher structural earthquake standards. The comment's presented exhibit indicates Fanita Ranch is on the periphery of an area considered to have a wildfire risk. The comment does not take into account that new ignition-resistant structures would not have the same risk as older homes or unmaintained vegetation, and therefore the exhibit is lacking usefulness beyond identifying where wildfires may occur. The provided opinion regarding fossil fuels directly leading to

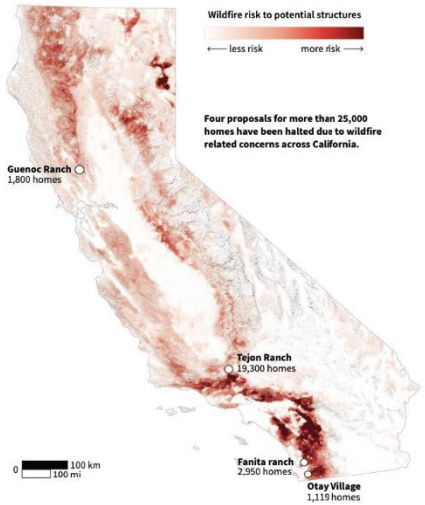
O2-8 cont.

The real emergency is one the REIR and Santee City Council refuse to recognize. It is the economic dependence upon fossil fuels responsible for the rapidly increasing trend of fire severity. The REIR is inadequate without considering how climate breakdown / increasing fire severity is likely to impact the project site.

4.18 Wildfire

"Since 2016, more than 50,000 structures in California have been destroyed by wildfire…Eighteen of the 20 largest wildfires in California history have happened since the turn of the millennium - 12 of them since 2016."[1]

O2-9



[1] Exhibit 1. Emma Marris, People Deserve to Know if their Houses are Going to Burn. March 15, 2022, The Atlantic. https://www.theatlantic.com/science/archive/2022/03/wildfire-insurance-california-fair-plan/627065/ Reuters Graphics.

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trend of fire severity is noted. However, there have been wildfires throughout California's history, including some of the largest wildfires recorded. The environmental analysis conducted for the proposed project (see Fire Protection Plan (Appendix P1)) considers climate change in the selection of fuel models and estimating worst-case conditions.

O2-9: This comment states that since 2016, over 50,000 structures in California have been destroyed due to wildfires and claims the Recirculated Sections omit relevant disclosure regarding acquiring fire insurance and of increasing fire severity. The comment provides no details for the 50,000 structures destroyed. The vast majority of these structures were built prior to the adoption (and subsequent regular updating) of restrictive fire codes and/or did not have adequate, maintained defensible space. Please refer to Thematic Response 4 – Fire and Evacuation specifically subsection 4d for details regarding why buildings constructed to the latest ignition-resistant codes are superior to older structures during wildfire events. Contrary to the comment, the Recirculated Sections specifically address the prior CEQA deficiencies identified by the court (see summary provided in Chapter 0, Preface). The City disagrees with the conclusory statement that the Recirculated Sections are in any way deficient or omit information relevant to assessing fire risk. Finally, the statement regarding fire insurance

O2-9 cont.

Severe recent fire losses in California and their impact upon potential retention of fire insurance coverage in California are not disclosed.

The REIR is deficient because it fails to remedy deficiencies identified by the court and because it omits relevant disclosure of increasing fire severity.

REIR 4.8-2. "Extreme conditions, used in worst-case fire modeling for the project site, include 92ºF temperatures…"

Fanita project fire modeling underestimates worst-case temperatures, winds and humidity levels.

Temperatures in Santee now exceed 92ºF during any season, commonly exceed 100ºF and approach 120ºF during extreme heat waves. [50+ years of experience as a resident]

O2-10

Pro-Development bias in the data presented above becomes more readily apparent by comparing Santee's own Ordinance 570, which documents significantly hotter weather than the 92ºF temperatures utilized in "worst-case fire modeling." "Temperatures ranging between 75- and 100- degrees F are common throughout the year." [Exhibit 10. Ordinance 570, Climatic Conditions: p. 2]

So "worst-case temperatures" are underestimated by a minimum of 8ºF in REIR fire-modeling.

The last seven years have been the warmest years on record worldwide. All indications are for continued temperature rise due to global dependence upon fossil fuel consumption that disrupts atmospheric energy circulation and prior rates of energy release back into space.

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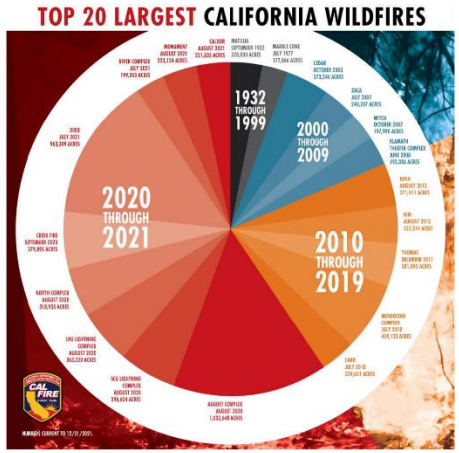
coverage in California raises economic or social issues that are beyond the scope of CEQA and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections. Therefore, no further response is required.

O2-10: This comment states the proposed project's fire modeling underestimates worst-case temperature, winds, and humidity levels and fails to mitigate risks to future project residents. The comment further states the project's fire planning needs to discuss fire insurance withdrawals. The City disputes the assertion that the data used for fire modeling contains any bias or understates temperatures, winds, or humidity levels. It does not. The temperatures and other weather inputs used for fire behavior modeling were based on historical weather data during extreme wildfire. These are standard modeling inputs using publicly available data. For clarification, higher temperatures input into the model would not change the model outcomes, as they are highly influenced by humidity and wind, not temperature. Humidity and wind determine plant internal moisture levels, which influences their propensity to ignite. Refer to responses to comments I85-2, I94-7, O2-8, and O2-16 for additional information. With regard to fire insurance coverage, please refer to response to comment O2-9.

O2-10 cont.



Project fire modeling and planning should reflect the reality of increasing temperatures and resulting insurance company coverage withdrawals[2] from severe hazard zone homes, but the REIR ignores the issue and fails to disclose, avoid, or mitigate for the significant impacts to future project residents.

O2-11

Local Regulatory Ordinance & CA Public Resource Code - PRC

"The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under ***average*** weather conditions would be unlikely to ignite the structure." PRC 4291(a) (emphasis added)

[2] Exhibit 25. Camille von Kaenel. 09/03/2021. Insurance Companies Increasingly Drop Homes Throughout San Diego County As Fire Risks Rise. inewsource. https://www.kpbs.org/news/2021/09/03/insurance-companies-increasingly-drop-homes-throug

O2-11: The comment cites Public Resource Code 4291 and claims the proposed project does not take into consideration frequency of severe weather extremes. The comment's statements regarding increasing fire severity are not accurate. The project bases its protective features and measures on extreme fire weather - extending the fuel modification zones (FMZs) beyond Public Resources Code Section 4291 requirements and providing for numerous additional measures customized for this site and its fire environment (e.g., FMZ for off-site neighbors at edge of property, extended FMZ to 150 to 170 feet wide (versus 100 feet wide), 50 feet wide FMZ along access roads, twice a year FMZ inspections and ongoing maintenance). Please refer to Thematic Response 4 – Fire and Evacuation specifically subsection 4d for details regarding the redundant and layered fire protection system customized for Fanita Ranch. Also please refer to responses to comments I94-7 and O2-16 for additional details.

O2-11 cont.

The building and defensible space enforcement standards applied to the project are designed to prevent ignition under average weather conditions and consider if ignition is likely or not. Building standards and defensible space enforcement do not consider the increasing frequency of severe weather extremes. The REIR's failure to disclose and distinguish between fires impacting the project during average weather conditions and fire impacts under severe weather conditions cripple the document.

Defensible Space Inspections are conducted primarily to prevent transition of fire from vegetation to structures and/or from structures to adjacent vegetation, but enforcement is limited by professional judgement that considers site variables under "average weather conditions."

Please disclose to the public how California PRC 4291, more restrictive County of San Diego Defensible Space Ordinance, and City of Santee Ordinance 570 relate and derive enforcement authority for the project?

O2-12

What are the consequences for not meeting the standards of the governing codes relative to notices, citations and forced abatement?

How many Defensible Space Inspectors does Santee currently employ relative to the number of structure occupied parcels in the city?

How many Defensible Space Inspections does Santee complete in a year and how are those inspections documented?

How many notices, citations and enforcement actions has Santee made since 2007? Please disclose by year to compare relative to increasing wildland-urban-interface.

How many Defensible space inspector will be assigned to the project and how will they be funded? What will be their enforcement process?

O2-13

A secondary (and usually undiscussed) purpose of a Defensible Space Inspection is to assist homeowners to adapt to a "new normal" of increasingly extreme fire behavior, but there are limitations to adaptive ability. What are these limitations and how will they effect the project?

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O2-12: This comment includes multiple questions regarding defensible space inspections. It is unclear where the definition of fire inspection was derived, but it is only partially accurate. With regard to City enforcement, municipalities have extensive authority under state and local law to protect the public health and safety, including in the area of fire safety. Inspections occurring twice per year at the project site are designed to ensure that the landscape meets the strict requirements of the City and project Fire Protection Plan (Appendix P1) (FPP) as these requirements are known to starve fire of fuel and halt its progression while reducing its intensity. This is important because it provides a managed buffer between the wildlands and the developed community, providing setbacks that protect the community. Inspections at the project site would be completed to ensure that the FMZs are, at all times, consistent with the FMZ requirements detailed within the FPP and approved by the SFD. While the site's FMZ would be in compliance with all three of the comment's listed code requirements, in fact exceeding all of them, the FPP would be the basis for inspections and project compliance will be judged based on the requirements defined in the FPP. Enforcement authority is derived from the City Fire Code with amendments to Chapter 49 requiring a Fire Protection Plan to determine if more than 100-foot defensible place is needed as a result of the fuel modeling and behavior analysis. The Fire code, as amended, requires 100-foot defensible space with Zone 1 and 2, which is more restrictive on type of vegetation, irrigation, thinning, etc. The project

applicant would meet the requirements and if found to be out of compliance, then they will be given 30 days to correct the identified issues. The City has the ability to order more prompt compliance if health and safety concerns warrant quicker action. If not corrected, then forced abatement would be conducted and the HOA billed. Moreover, for repeat offenses, the City can use the court system for enforcement of applicable fire requirements. The City does not currently employ any defensible space inspectors. Therefore, a qualified third party weed abatement service, to the SFD's satisfaction, would be hired by the HOA to conduct the inspections, send notices, and force the abatement of properties when necessary. Defensible space inspections would be conducted by a qualified WUI inspection company, hired by the HOA, who will devote an appropriate number of inspectors and apply technological assets like UAVs (unmanned aerial vehicles aka drones) to finish inspections within a short time frame. The inspectors would perform these inspections and provide documentation to SFD for accountability. For comparison, Fire Prevention Services Inc., the City's contracted weed abatement company, has documented the number of inspections, notices, and citations sent annually from December 2007 through December 2021. Most recently, in 2021, there were 166 courtesy notices sent, as documented by Fire Prevention Services, Inc. The remaining questions posed in this comment do not relate to the adequacy or accuracy of the information provided in the EIR, nor address significant environmental issues associated with the proposed project.

O2-13 cont. REIR 4.18.2.2 discusses agencies responsible for Defensible Space Inspection and enforcement. Notably absent from the discussion is the City of Santee where properties on the WUI and elsewhere would fail inspections if they were conducted.

The REIR further states:

"If violations of the program requirements are noted, inspectors list the required corrective measures and provide a reasonable time frame in which to complete the task. If violations still exist upon re-inspection, the local fire inspector will forward a complaint to the County for further enforcement action." [4.18-7]
How many violations in Santee have been identified and sent to the County? What has been the result? Has the county enforced violations in Santee? If so, please provide documentation, because the REIR is like errant on this assertion.

O2-14 Since I posses substantial experience performing Defensible Space Inspections as assigned to the Cal Fire Prevention / County of San Diego Community Risk Reduction Units, I am aware of flaws the REIR statement relies upon.

While Cal Fire / County Fire will respond to public complaints, the complaint response is secondary to progress prioritized for annual inspection plan areas. Because engine crews, which may be absent on strike team assignments, etc. are relied upon for a substantial percentage of annual inspections and because the crew of DSI inspectors is insufficient for the vast number of parcels in the county, annual inspection plans are regularly not completed.[3]

Furthermore, failing secondary inspections, when completed, may not result in an actual citation or forced abatement. There are very few citations issued for failing homeowners both county and statewide, with those few citations focused upon

O2-15

[3] Exhibit 30. Joshua Emerson Smith. Reporter notebook: Cal Fire San Diego cracks down on flammable vegetation around homes. April 30, 2021. San Diego Union-Tribune. https://www.sandiegouniontribune.com/news/environment/story/2021-04-30/cal-fire-san-diego-flammable-vegetation?fbclid=IwAR1GjIuNWegcGiXD9MeJsa_YQ3Yyegq__T0IHB98gVphlHTJH7vQT1Z4tSs

O2-13: This comment discusses a secondary purpose of defensible space inspection is assisting homeowners in adapting to extreme fire behavior. The project provides FMZ outside private property on HOA common area, and therefore, the focus is on maintaining the perimeter defenses according to the FPP. Private property owners play a role by caring for their properties and will be educated on an ongoing basis. There are no limitations anticipated that will affect the project's defensible space function. Existing City areas and their inspections are not related to the project, which will self-fund its inspections, not relying on the City or its available resources for this twice-yearly task.

O2-14: This comment addresses enforcement of defensible space inspections. The reference to "County" on page 4.18-7 in Section 4.18.2.2, Local, of the Recirculated Section 4.18, Wildfire, cited in this comment should instead be to "City." The Recirculated Sections of Final Revised EIR have been revised to reflect this change, and the primary responsibility of the City (Santee Fire Department) to enforce violations of defensible space requirements at Fanita Ranch. The comments relating to CAL FIRE and County Fire are noted, and these agencies would not be relied upon as the primary source of enforcement responsibility.

O2-15: This comment is concerned with enforcement of inspections for the proposed project. This inspection program will be different than the commenter's stated

worst offenders and no current program for abatement in existence.[4] How does Santee's record differ and suggest we will see something different over the long-term for the project?

Inspections conducted by an HOA or third party on Fanita Ranch are likely to have similar limitations. In some HOA governed area I inspect, it is actually HOAs that are deficient in Zone 2, impacting concerned/threatened residents.
How will Santee enforce action from reluctant HOAs?

O2-15 cont.

Since Santee does not routinely conduct Defensible Space Inspections and notice violations, Fanita Ranch cannot rely upon a non-existent program within its jurisdiction or rely upon partially completed programs in other jurisdictions to prevent transfer of structure fires to open space during periods of extreme fire weather.

Reliance upon fire inspection and suppression departments in other jurisdictions as partial rationale for locating residents within a severe fire hazard zone is inappropriate.

O2-16

REIR 4.18-2 acknowledges Santa Ana winds are not limited to Fall seasons. Santa Ana winds are also occurring in late Spring and have potential wind "speeds of up to 50 miles per hour or higher." However, the REIR underestimates potential high temperatures, relative humidity, fuel moisture levels. Temperatures above 115 F and Relative Humidity under 10 percent have occurred outside of Fall and are likely to continue to occur with greater frequency.

O2-17

What are the levels of service for SR-52, SR-67, Mast Boulevard, Cuyamaca Street, Fanita Parkway and Magnolia avenue during morning and afternoon commute hours?

[4] Exhibit 31. Joshua Emerson Smith. California's not enforcing wildfire-prevention rules for homeowners, leaving tens of thousands of properties vulnerable to big blazes. July 7, 2019. San Diego Union-Tribune. https://www.sandiegouniontribune.com/news/environment/story/2019-06-11/californias-not-enforcing-wildfire-prevention-rules-for-homeowners-leaving-tens-of-thousands-of-properties-vulnerable-to-big-blazes

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experience with other inspection programs. There will be strict enforcement, as required by the FPP and funded by HOA, enforced by SFD. The HOA is conditioned to perform and has allocated funding for this program, maintenance, inspections and management. Fanita Ranch's program is funded by the HOA and a third party acceptable to SFD would perform the inspections. SFD has jurisdiction and enforcement responsibilities over the proposed project. Refer to responses to comments O2-12 and O2-14 for additional information.

O2-16: This comment claims the Final Revised EIR underestimates high temperatures, relative humidity, and fuel moisture levels. The comment is incorrect that the fire behavior modeling used underestimated inputs. The models were provided industry standard weather inputs including averages over many years, as the system is designed. Regardless, even if the inputs were biased to represent the commenter's opinions on what they should be, there would be minimal changes in modeling outputs. The largest change in the modeling was the use verifiable wind inputs based on historical Remote Automated Weather System (RAWS) data. The previous modeling used unverified wind inputs with no provided source. The previous modeling overpredicted flame lengths by approximately 40 feet. The community's design and fire protections were based on worst-case fire behavior as a conservative approach. It is estimated that the project

could have proposed 100 feet of FMZ and would have been consistent with code requirements and likely provided adequate protection, but these areas were extended to 150 to 170 feet where the off-site fuels were heavier and would produce longer flame lengths and more intense fire. This FMZ extension achieves setbacks of at least twice the modeled flame lengths.

O2-17: This comment is concerned with level of service (LOS) of City roadways and differences in evacuation times for these roadways. The question regarding LOS for various transportation facilities is beyond the scope of the Recirculated Sections. LOS methodology is not utilized in the evacuation analysis prepared as part of the Fire Protection Plan (Appendix P1) included with the Recirculated Sections. Refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For informational purposes, the LOS analysis is included in the Final Revised EIR, Section 4.16, Transportation. With regard to evacuation modeling and evacuation times, the results of the analysis may be found in Appendix D to the Wildland Fire Evacuation Plan (Appendix P2), Table 2, Evacuation Time Summary – All Scenarios. The "worst-case" evacuation scenarios assume all vehicles would be home (nighttime condition) and that residents would evacuate all of their vehicles, which would present a more conservative (worse) evacuation scenario compared to an evacuation during commute hours when many residents

O2-17 cont.

What are the differences in evacuation times during commute hours for existing residents north of Mast Boulevard (residents between Mast Boulevard and the project site) and proposed residents during significant evacuation scenarios and a worst case scenario?

O2-18

REIR 4.18-8 "…the Community Emergency Response Team, which educates community members about disaster preparedness and trains them in basic response skills, such as fire safety, light search and rescue, and disaster medical operations. The City is 1 of 20 jurisdictions that support and participate in the team."

I am unaware of the existence of or opportunity to participate in any such training in Santee as either a resident or fire professional. Who, what, when and where when does the Community Emergency Response Team operate?

REIR 4.18-8 significantly over-estimates the capability of the San Diego County Emergency Operations Center. The EOC cannot "ensure an effective, coordinated evacuation." Evacuations in San Diego County have been chaotic and deadly, despite outstanding work by the professional resources activated.

REIR 4.18-8. The utility of safety grid maps is over stated when evacuation required is immediate or imminent. Grids are relatively large and may contain substantial population densities. Population within a grid can easily gridlock ingress/egress at the project and/or adjacent infrastructure.

O2-19

REIR 4.18-10
4.18.3 Thresholds of Significance
The project would significantly exceed thresholds 2, 3, 4, 6, 8 and requires avoidance, additional mitigation or full disclosure with a statement of overriding considerations.

O2-20

REIR 4-18-12 cites an incorrect address for Fire Station 5 which may alter the anticipated response time estimate calculation.

O2-21

REIR 4.18-13 "50-feet of modified fuel areas along both sides of the road." 50-feet of fuel modifications are insufficient for gridlocked traffic experiencing an over burn adjacent to mature chaparral capable of flame generation exceeding 100 feet.

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and their vehicles would not be present. Further, regular "commute traffic" would not be anticipated to impede an evacuation event because law enforcement agencies and first responders would coordinate to control traffic in an emergency pursuant to the strategies set forth in County Emergency Operations Plan (EOP) Annex Q and outlined in the Recirculated Sections. Strategies that may be deployed to control traffic flow include closure of on- and off-ramps, signal control at downstream intersections, directing traffic to ensure outflow from at-risk areas, implement contraflow lanes, vehicle traffic segregation, transit rerouting, phased release of parking facilities, etc. Further, if an evacuation order were issued for all existing land uses located north of Mast Boulevard, the lead agency would control traffic flow into the evacuation area. Therefore, commute traffic would not be allowed to continue as normal.

O2-18: This comment is concerned with the Community Emergency Response Team (CERT) and San Diego County Emergency Operations Center. Regarding the comment's questioning of an area CERT program, the East County CERT program by Heartland Fire encompasses the City. For more information about the program, Heartland CERT can be contacted at 619-667-1355. Regarding the comment's evacuation statements, the majority of evacuations are effective and coordinated. While some level of chaos can be expected during

evacuations, it has historically been managed chaos and those at risk are effectively moved out of harm's way. Deaths have been attributed to late evacuations where evacuees refused to leave when directed to do so (SDCSD 2016). The comparisons and examples provided in the comment are not similar or applicable for comparison with a master-planned community that offers its own protection from fire if an evacuation is late. Gridlock issues are far less pertinent in fire hardened communities that offer the option to take temporary refuge/shelter in place, like Fanita Ranch. If a late evacuation (short notice) were to occur, it may be considered safer to keep people on site in well-protected homes, open spaces, the Village Core, a school or other designated space. Partial evacuations are likely to occur, which would avoid or minimize gridlock. Refer to Wildland Fire Evacuation Plan (Appendix P2).

O2-19: The comment provides a conclusory opinion regarding Section 4.18, Wildfire, thresholds of significance that is unsupported by facts, evidence or analysis. The City disagrees for the reasons detailed in the Recirculated Sections. No further response is required.

O2-20: The comment notes an incorrect address for Fire Station 5. The station is at 9130 Carlton Oaks Drive not Carlton Hills Drive. However, the response time was measured from the correct location. A correction has been made to the Recirculated Sections of the Final Revised EIR and Fire Protection Plan (Appendix P1).

O2-21 cont.

What are the flame lengths estimated on either side of the unmanaged areas these routes traverse?

How many residential streets within the project site are oriented north, northeast and east forcing potential driving toward the fire without an alternative? What are the distances for each of these street segments?

O2-22

REIR 4.18-13 over-states the utility of the Fanita Ranch Wildland Fire Evacuation Plan by calling it a "sophisticated evacuation modeling approach" without providing substantial data to support the claim.

REIR 4.18-13 makes a false assurance that "Wildfire evacuations from the site would be focused on early relocation from the project site long before a fire would threaten the project or its access routes." Since data documents the opposite, the REIR does not provide data to support the false claim the project can be evacuated prior to wind driven wildfires. This is a fatal flaw in the REIR.

O2-23

REIR 4.18-13 inappropriately places heavy reliance upon utilization of Temporary Refuge Areas (TRAs). TRAs are survival measures to be used by over-extended firefighters when an escape route to an appropriately sized safety zone has been compromised. TRAs are not appropriate for civilians to rely upon as dependable evacuation tools. Survival in a TRA may not be tenable as fire behavior intensifies. As conditions deteriorate at a TRA, a secondary action is required to prevent injury or death. The ability to asses these changing circumstances is challenging for professional firefighters and would be significantly lacking in the resident population. Furthermore, TRAs are not substitutes for identifying and utilizing viable escape routes and safety zones. [Cal Fire. 2014. Wildland Urban Interface Operating Principles, p. 244-255. Exhibit 2]

Even if new residents were to read and understand the "Ready, Set, Go!" brochure, executing the directions during emergency is tenuous. I have provided Ready, Set, Go! brochures to thousands of residents in San Diego County and discussed the concepts with interested residents. The REIR relies too heavily upon the public's limited ability to execute evacuation-specific actions during significant wildfires.

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O2-21: The comment incorrectly indicates that there are areas adjacent to the Fanita Ranch roadways where 100 feet flame lengths would occur. This is a false statement with no supporting evidence and in direct conflict with the comprehensive fire behavior modeling provided for the site. The Fire Protection Plan (Appendix P1) modeling results indicate that flame lengths are 30 to 40 feet near adjacent roads – this is specifically why 50 feet FMZ was provided along wildland exposed roadways. The project site plan provides street orientations and distances. The comment incorrectly states that residents would have to drive into an approaching wildfire. Roads will be separated by several hundred feet or more from an actual fire. There would be no situation/scenario where an evacuee would be forced to drive into a wildfire with this ignition-resistant landscape and FMZ separation provided by the project's fire-safe design.

O2-22: This comment questions the proposed project's evacuation modeling approach. The evacuation approach utilizes a sophisticated modeling software that is capable of modeling large numbers of vehicles on available roadways and determining evacuation timeframes. This type of evaluation is not possible absent a computer model and therefore, is considered sophisticated. The environmental analysis (Section 4.18 – Wildfire), including the Fire Protection Plan (Appendix P1) and Wildland Fire Evacuation Plan (Appendix P2) all state that early evacuations are the goal and preferred approach. However, in a scenario where it is not possible to evacuate long before fire arrives, for example,

should a fire ignite close to the project, then other approaches would be prioritized for safety, including partial evacuations, partial relocations (moving perimeter residents to interior areas), or sheltering on site.

O2-23: This comment states the project puts too much reliance on temporary refuge areas (TRAs). Contrary to the comment's suggestion, the environmental analysis of wildfire and evacuation does not rely on TRAs for citizens. The comment confuses the term temporary refuge for residents (which is similar to sheltering in place) with the TRAs meant for firefighters. As explained in the Recirculated Sections, if a late or short notice evacuation occurs, it may be considered safer to keep people on site in well-protected homes, open spaces, the Village Core, a school or other designated space. There is no expectation that citizens will be determining whether they should seek on-site refuge or evacuate, or that citizens will rely on TRAs. This will be managed by emergency, fire and law enforcement through messaging and on-the-ground traffic control. Moreover, the Recirculated Sections did not rely on TRAs in lieu of identifying evacuation routes or safe areas. Refer to the Wildland Fire Evacuation Plan (Appendix P2). This comment also raises a concern based on misinterpretation of the environmental analysis. The Ready, Set, Go! program along with the HOA's ongoing educational outreach to residents is targeted at raising awareness and readiness of the Fanita Ranch population. There is no reliance on this program alone. Rather, the program is a best practice for readiness so that residents are prepared to act as they are directed by emergency managers.

O2-24 REIR 4.18-14. Threshold 2 conclusion of less than significant impacts is not supported.

O2-25 REIR 4.18.21. The REIR anticipates completion of FMZ vegetation management twice per year. [4.18-29] Zone 2 is proposed to eliminate 70% of native shrub vegetation. The REIR acknowledges disturbance introduces "highly flammable exotic grasses" of greater susceptibility to ignitions, which can then ignite more fire resistant native shrubs [4.18-25]. Leaving just 30% of native vegetation in Zone 2 creates an unrealistic and likely unattainable goal for control of flash fuels in FMZs. The result is likely to be the conversion of natural lands into a more ignition vulnerable landscape, especially over the longer-term.

O2-26 The REIR misrepresents the potential for multi-directional evacuation on the project site. In fact, at least half of the Vineyard Village development island must evacuate into the direction of Santa Ana wind driven fires.

O2-27 REIR 4.18.21-25
The REIR fails to disclose and discuss the trade-off made by designing high density, close proximity structures inconsistent with the lot space requirements adopted by Land Use Element Fanita Ranch Guiding Principle 3 of the Santee General Plan:

3. The plan shall contain a mix of house sizes on lot sizes distributed as follows:
6,000 sq. ft. lots – 20 percent of total lots
10,000 sq. ft. lots – 20 percent of total lots
20,000 sq. ft. lots – 60 percent of total lots or greater
LAND USE ELEMENT
Santee General Plan
Santee, California - 1-29 - 1-30

Violation of GP3 is a significant un-avoided, inadequately mitigated and undisclosed impact to public safety because design of structures in close proximity within a severe fire hazard zone significantly increases the potential for massive losses from structures to structure direct flame impingement cluster burns.

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O2-24: The comment expresses an opinion that Section 4.18, Wildfire, threshold 2 conclusion is not supported, which is not substantiated by supporting evidence or analysis. Therefore, no additional response is required.

O2-25: This comment questions the proposed project's FMZ vegetation management strategy. The comment ignores the comprehensive and regular maintenance and inspection schedule that will occur throughout the FMZ on an ongoing basis. Flashy fuels that do establish will be maintained according to the Fire Protection Plan (Appendix P1). The FMZs also include large areas of gravel/rock cover which would inhibit grass and exotic grassy fuel growth. The potential for opportunistic vegetation establishment was evaluated as part of the Fire Protection Plan analysis and determined to be manageable through the requirements detailed in Section 6.1 of the Fire Protection Plan.

O2-26: This comment is concerned with multi-directional evacuation and the evacuation of Vineyard Village. The City disagrees with this comment, which provides no evidence or analysis to support the opinion expressed. The comment neglects to consider that late evacuations would not occur on this site as residents would be sheltered in place or moved to interior locations if evacuation was considered unsafe. In no case would a resident be required to travel through active wildfire as residents in Vineyard

Village would be driving through hardened road corridors with setbacks from the nearest wildland fuels which exceed code requirements.

O2-27: This comment suggests that the proposed project is inconsistent with the Land Use Element of the Santee General Plan. Refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. Moreover, the comment suggests that homes on larger lots are safer from wildfire than more dense residential developments. This comment also describes the possibility of cluster burns, which can happen within clustered homes of older, more vulnerable homes that are constructed close together. In fire hardened communities like the proposed project, more dense development, with ignition-resistant landscapes and buildings, is the preferred approach that results in less exposure to wildfire, easier defensibility, and safer firefighter environment (Appendix P1). Cluster burns are less likely in a fire hardened community like the proposed project because: (1) fire is set back from the developed areas by wide FMZs, (2) landscapes are maintained and unfriendly to ember ignitions, (3) structures are protected from airborne ember penetration, the leading cause of structure damage/loss from wildfires, and structures are sprinklered which would suppress or control an accidental structure ignition, (4) the shells of all structures provide extended timeframes for combustion and contain heat, (5) there is a minimum of 10 feet

O2-27 cont.

"The Santa Ana winds with wind gusts of up to 60 mph blowing from northeast/ east pose a significant threat from wind-blown embers to all structures within this project." [Fanita Ranch Fire Protection Plan 2007. p 14. AR 028606]

IIBHS Major Finding: "While homes adjacent to wildland are most vulnerable to wildfires, homes in the interior areas of housing developments that were located less than 15 feet apart, were much more likely to burn in clusters - in other words, multiple homes right next to each other tended to burn… Cluster burning was not witnessed in homes located more than 45 feet apart from each other." [Exhibit 3. Insurance Institute for Business & Home Safety. Mega Fires: The Case for Mitigation. p. 8, 26.]

O2-28

Violation of GP3 is also significant because the project is not capable of being fully evacuated during firestorm event ignitions within 16-miles aligned with the project. Occupied and cluster burning structures have significant potential to become a mass casualty event.

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between structures, with greater distances on sloped streets, and (6) the on-site fire station and other Santee fire stations can respond into the proposed project in a time frame that is faster than it would take for a structure to become fully involved with fire to the point it could impact a neighboring structure. Refer to Fire Protection Plan (Appendix P1), Section 2.2.8 and 3.1 for additional information. The image included with the comment provides no details regarding where it is, what the age of the buildings were, how vulnerable they were to embers, etc. This renders the image unhelpful for comparison with Fanita Ranch. The comment provides quotes from the 2007 Fire Protection Plan prepared for a previous project proposed at the project site. The quotes are provided without proper context. Embers may pose a significant threat, but one that has been thoroughly analyzed and addressed through the fire protection system defined in the project's 2022 Fire Protection Plan (Appendix P1). The comment also provides a quote about cluster burning, but provides no context for the age and vulnerability of the damaged homes in its example. Embers would be the primary cause of these homes burning, and protection from embers have been thoroughly addressed in the fire planning, design and construction requirements for the proposed project.

O2-28: Refer to response to comment O2-27 with regard to General Plan compliance. This comment includes an

unsupported statement that the project cannot be fully evacuated during firestorm event ignitions within 16 miles, which is based on data presented out of context. There is no indication that the entire project would need to be evacuated given its fire protection system detailed in Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b. Emergency managers, such as the Santee Fire Department and San Diego County Sheriff's Department have internal evacuation pre-plans to move people when needed in an emergency and expressed confidence in their ability to evacuate the project and surrounding community if necessary.

Furthermore, consistency violation of GP3 requires a public vote for project approval subject to Santee General Plan Protection Measure N and other State law.

Will the project be placed on the ballot for consideration by Santee voters as required by Measure N passed in 2020?

O2-29

With regard to a public vote, the REIR information is contradictory to the statement made by Mayor John Minto to the press after the opening of the REIR public comment period.

"Minto… noted that because the project would need an amendment to the city's General Plan it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval."[5]

If there will not be a public vote, how do you explain the Mayor's statement?

What are the range of separation distances between structures?

Where, by distance between structures/proximity range, are those structures arranged on the project's developed site landscape?

O2-30

Once ignited, what is the minimum distance required between structures to prevent a likely transfer of a structure fire to an adjacent structure? What data supports a minimum separation between structures?

What is the range of inadequate spacing for project structures vulnerable to structure to structure direct flame impingement?

Furthermore, the need for primary booster pump and backup power sources (subject to failure) to maintain water pressure significantly increases the potential for a cluster burn failure.

O2-31

[5] Mike Allen. Santee Council Removes Fanita Ranch From November Ballot.. June 13, 2022. East County Magazine. Exhibit 3. https://www.eastcountymagazine.org/print/37950?fbclid=IwAR0bu8JR6GGiwGs9n7Qh6ziLuwWlnCSOFZwoVhC1rM58dYu96bqQW8ulLjQ

O2-29: This comment asserts that the proposed project is inconsistent with the Land Use Element of the Santee General Plan and that the public should vote on Measure N. The City refers the commenter to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, as well as Thematic Response 2 – Referendum and Measure N Applicability.

O2-30: This comment includes a series of questions regarding spacing of structures on the project site. Structures within the project would be a minimum of 10 feet apart. The final location of structures has not yet been determined. Recirculated Sections, Figure 3-4 in Chapter 3: Project Description, provides a Conceptual Land Use Plan. This comment presumes ignition and cluster burning, which is not documented to have occurred in new, master-planned communities providing a system of fire protection similar to Fanita Ranch. Layers of protection including wider than required FMZs, site-wide ignition-resistant landscapes, ongoing maintenance and inspections, ignition-resistant buildings, ember resistant buildings, enhanced window fire protection, fast fire department response, and interior sprinklers. All combine to minimize likelihood of ignition, and potential for home-to-home ignition. Please also refer to response to comment O2-27 for more details on the minimization of cluster burn potential.

O2-31: The comment expresses concern regarding power shut off by SDG&E during a wildfire and how that may impact the 21 on-site residences that would rely on a pump to achieve full water pressures. First, power shutoffs are limited in urban areas. Second, when shutoffs are implemented, SDG&E has the ability to focus areas for power shut off where there is a high likelihood of vegetation making contact with energized transmission lines that could lead to wildland areas. Thus, shutoffs are rare within urban areas like Santee. Third, if power was lost for any reason, the backup (secondary) power source would engage and provide the needed water pressures. The booster and backup power would be reliable, maintained, and replaced as needed to keep it reliable and operating. Loss of power would trigger the backup generator, which is common practice for booster pumps. The generators likely would be powered by solar battery or diesel. The pumps would be housed in ignition-resistant/masonry structures protected from fire impacts. The backup power source would alleviate the concern presented in the comment. Finally, even in the speculative circumstance that the backup power source failed, there is still residual water pressure that would provide water availability to firefighters (though not at 40 psi).

The comment provides no substantiation for its claim that the use of a booster pump and backup generators increases the potential for a cluster burn. For the reasons discussed herein and in response to comment O2-27, this claim is refuted.

O2-31 "A private booster pump and secondary power source would be installed for approximately 21 single-family residences in Vineyard Village where the area experiences residual pressures of less than 40 pounds per square inch during peak hour demand conditions."
[REIR 4.18.23]

What are the power sources for the pumps and where are the power sources and pumps located?

O2-32 The REIR fails to disclose and discuss the significant adverse impacts of choosing to locate residential development above steep slopes, chutes and fire chimneys with Fuel Model 4 Chaparral in direct path of the prior Cedar Fire corridor. [II: 101:29204-5]

O2-33 REIR 4.18.37 Ignition Resistant Structures

The REIR attempts an apples to oranges inaccurate comparison of fire activity and structural design in Rancho Santa Fe. My prior comments already in the Administrative Record detail how the wind and fire activity diminished significantly prior to the 2007 Witch Creek fire threatening the Rancho Santa Fe development. Structures built after 2007 continue to be damaged or destroyed in wildfires. Despite available research, the REIR does not disclose the conclusions and implications for the Fanita Ranch project.

Discussion of significant fires that did not sustain structure loss without disclosing and discussing recent fires with modern structure loss displays pro-development bias and reduces the credibility of the REIR.

What California fires and developments since 2007 have sustained structure losses in wildfires and why?

"Almost no one expected it. After all, the homes were brand new. They were surrounded by dozens of other homes. And most importantly, they met the state's building codes for areas at heightened risk of wildfires.

O2-32: This comment expresses an opinion that the Recirculated Sections do not disclose the impact of choosing to locate residences above steep slopes, chutes, and fire chimneys with Fuel Model 4 (FM-4) chaparral in the path of the previous Cedar Fire. The comment's claim is inaccurate and fails to acknowledge the extensive fire protection design measures built into the proposed project. Fire Protection Plan (Appendix P1), Section 2.2.1 describes terrain, including slopes. Section 6.1 explains that predicted flame lengths vary on the Fanita Ranch site-adjacent slopes, which would adjoin the provided FMZs. The zones are customized for the site based on its terrain and vegetation characteristics as well as resulting fire behavior modeling exercises, and are more conservative than the widely accepted 100-foot standard, which is also the Santee Fire Department standard. As a result, the environmental analysis concluded that wildfire risk to residents and structures, as well as evacuation, is less than significant.

O2-33: This comment is concerned with the Section 4.18, Wildfire, comparison of fire activity at the project site and Rancho Santa Fe and the evaluation of wildfires that have occurred since 2007. The Rancho Santa Fe comparison provided in the environmental analysis is a valid comparison based on fuels, terrain and wind alignments. There are other examples provided in the Fire Protection Plan (Appendix P1), Section 3.1, of high-wind wildfires and successful ignition-resistant communities performing

as expected. Although there have been post-2007 wildfires that have caused structure losses, the age of the structures and the ongoing maintenance levels is highly variable. Substantial evidence supports that newer homes are much better protected from wildfire (see various references in the Fire Protection Plan). However, if the homes/buildings do not include a comprehensive system of protection like that incorporated into the proposed project, and that would be maintained as a condition of project approval, there are vulnerabilities that can develop over time. Those vulnerabilities are analyzed in the Fire Protection Plan and addressed through ongoing, funded maintenance and SFD cooperation.

Evaluating every wildfire in California since 2007 would be well beyond the scope of an EIR's analysis, particularly when key similar fires and their results on similar developments with similar protections were evaluated and found to support fire safety conclusions. Similarly, the comment ignores the many examples of newer development similar to the proposed project performing well in fire events, and instead focuses on communities that sustained damage and losses, but which lacked the redundant fire safety and design features comparable to the proposed project. These examples are misleading and invalid. The comment provides a quote it attributes to the Ventura County Fire Marshal, but there is no valid link to

"Ventura City Fire Marshal Joe Morelli thinks topography played a role…And even with the fire-resistant construction standards you can still have loss. They're not fireproof standards."

"According to Cal Fire data, 80 percent of houses destroyed in the Thomas Fire had fire-resistant exteriors and 90 percent had fire-resistant roofs."[6]

So why the determination to build on Fanita despite the hazards?[7]

O2-33 cont.

The answer in Santee, documented in my prior letters is mirrored elsewhere and specifically in Orange County. Financial reasons there include:

* $50,000 to incumbent campaigns of the decision makers
* > $1,000,000 annually to the local fire department with the bill for actual fire suppression going to state and federal governments as a subsidy
* $8.25 million local annual property tax revenue
* Substantial $ to the growth machine: Business / real estate / development consultant industries

[Emily Guerin. 09/24/2018. Why Do We Keep Building Houses In Places That Burn Down?][8]

Appendix P2. Wildfire Evacuation Plan

O2-34

The "Wildland Fire Evacuation Plan for the Fanita Ranch Community" (plan) is inadequate to mitigate public safety impacts below a level of significance. The plan lacks substantial evidence to support its conclusions and is contradictory.

About 8,000 new residents are proposed to be concentrated on Public Safety Map Grid page 224… in the highest of fire hazard severity zones.

O2-35

[6] Exhibit 5. Emily Guerin. December 9, 2018. Fire-Resitant is not Fire-Proof, California Homeowners Discover,, NPR. https://www.kunc.org/2018-12-09/fire-resistant-is-not-fire-proof-california-homeowners-discover

[7] Exhibit 33. Anna Huntsman and Jake Steinberg. Developments in disaster-prone areas mean big bucks for builders, but can leave communities at risk. August 13, 2019. News21. https://stateofemergency.news21.com/developments-in-disaster-prone-areas-means-big-bucks-for-builders-but-can-leave-communities-at-risk/

[8] Exhibit 6. Emily Guerin. 09/24/2018. Why Do We Keep Building Houses In Places That Burn Down? LAist. https://laist.com/news/why-do-we-keep-building-houses-in-places-that-burn-down

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substantiate it or put the quote in context. The quote lacks specificity regarding the destroyed homes. As stated by numerous fire professionals since 2007, the key attribute for wildfire protection is ember resistance. Ember resistance refers to keeping embers out of attics and other spaces. The destroyed homes referenced likely did not include specific ember-baffled vents like Fanita Ranch buildings will. Further, the occurrence, width, and maintenance of FMZs was not detailed and are key to understanding if this is another apples-to-oranges comparison. The comment next cites an article that was prepared by an author with no expertise in wildfire protection and quotes persons with no wildfire protection expertise other than opposing new developments. These lay opinions expressed in the article do not refute the professional opinions of the project's Fire Protection Planners or the SFD's career fire experts. The balance of the comments speculating on "the determination to build" the project do not raise significant issues regarding the adequacy or accuracy of the information provided in the Recirculated Sections. Therefore, no further response is required.

O2-34: This comment claims the Wildland Fire Evacuation Plan (Appendix P2) is inadequate to mitigate public safety impacts. The City disagrees with the conclusory opinion expressed in this comment. The comment includes no supporting evidence or analysis and commenter is not an

expert in wildfire evacuation. The opinion expressed is contrary to the extensive environmental analysis and expert opinion contained in the Recirculated Sections.

O2-35: This comment is concerned with the Ready, Set, Go! Program described in the Recirculated Sections. Securing one's home is a nearly automatic response when leaving and is why the Wildland Fire Evacuation Plan (Appendix P2) recommends this action. Most evacuating residents will be wary to leave their home unlocked. The recommendation to lock doors and windows does not contradict the general and broad guidance of the Ready, Set, Go! Program, which process is intended to get residents ready and prepared to undertake an evacuation. Further, this recommendation in the Wildland Fire Evacuation Plan (Appendix P2) would not result in an unsafe situation for residents or firefighters. The most likely evacuations would occur long before fire arrives. If this is not possible, due to an ignition near the project site, some populations may be directed to on-site areas internal to the site or the Fanita Commons Village Center, or be directed to remain in their protected homes. Refer to Section 3.1.6 of the Fire Protection Plan (Appendix P1). Contrary to the comment, it is not the case that resident's homes are intended to be left open and available to any resident to seek shelter in another person's home in a shelter in place or temporary refuge scenario. If firefighters were to need access, they have the tools to

O2-35 cont.

The plan contradicts the Ready, Set, Go!" (RSG) model it proposes for public distribution by directing residents to "make sure to secure your home by locking all doors and windows…" [Wildfire Evacuation Plan for the Fanita Ranch Community, p. 10]

Cal Fire Evacuation Tips and RSG under "Set" directs evacuees to leave doors **unlocked**.[9] This is a significant contradiction and exhibits how if fire planners are confused - significant segments of the the public are likely to be confused when events occur also, significantly compromising safety.

The Directive to lock all doors is alarmingly significant because during events when the project cannot be evacuated prior to the arrival of the fire front, the plan relies upon the availability of "Temporary Refuge Areas" (TRAs). If doors are expected to be open by evacuees or firefighters and they are not, severe injuries could occur.

Even if the public becomes aware of the correct directive to leave doors unlocked to facilitate TRAs and structure protection, many residents will not do so because of un-locked doors vulnerability to looting.

O2-36

Furthermore, the Evacuation Plan places inappropriately heavy weight on the public's ability to timely read, understand, remember and then execute during an emergency by utilizing RSG and the 5 additionally listed preparedness reference tools residents might be introduced to.

Without disclosing, supporting and defining the "highest probability wildfire", the Plan makes an outrageously unsupportable assertion; "targeted areas of Fanita Ranch and the existing community can be evacuated within 19 minutes." [plan p. 15].

The plan does not consider the vast majority of residents are unlikely to be in the model state of Ready, Set before they decide to Go! **There will be significant lag times between the fire size-up, the Evacuation Order and actual execution of**

[9] Exhibit 7. Ready Set, Go! Get Set, p 9. Exhibit 10 Evacuation Tips, PDF page 45.

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open locked doors readily. Further, firefighters would be able to refuge on the lee side of almost any structure or in any street in the project. There are no readily anticipated scenarios where a firefighter would have to seek refuge within a private residence. Other options are available throughout the project site that are devoid of vegetative and readily ignitable fuels.

O2-36: This comment claims the Wildland Fire Evacuation Plan (Appendix P2) places too much weight on the public's ability to understand and execute proper evacuation techniques and refers back to 2007 wildfires. The approach at Fanita Ranch is to provide resources to raise awareness and readiness. In an actual evacuation, there will be direction and guidance provided by messaging and on-the-ground personnel directing residents and traffic, controlling traffic movement through key intersections, and moving populations at highest risk. Residents will not need to memorize Ready, Set, Go! Program or other plans but have a general understanding of what they may be directed to do during an emergency. The modeled evacuation time is a legitimate output based on the assumptions for the modeled scenario. The scenario was prepared in coordination with SFD and based on a realistic scenario that could occur during a wildfire event. The 19-minute evacuation time represents the "travel time." The "evacuation time" would assume that there would be mobilization time, which varies by the event and the scale

the order after it is received, even if the directive is heard, understood and acted upon.

For example, the 2007 Harris Fire ignited at 9:23 am, but it wasn't until 10:30 am until the first Reverse 911 evacuation calls were made.[10] (Sorenson and Vogt. p. 2).

This was a lag of 37 minutes from ignition to public alert experienced even after post 2003 Cedar Fire upgrades to communications. Add additional time for the public to digest the information and act.

Furthermore, the new communications system did not reach all residents targeted. For the 2007 fires, **37% of respondents surveyed indicated they did not receive the evacuation alert.** (Sorenson and Vogt. p. 8).

O2-36 cont.

Significantly, of the survey respondents who acknowledged receipt of evacuation directives, 41% did not evacuate. (Sorenson and Vogt. p. 12). If a similar percentage ignores directives on Fanita Ranch, the close proximity of structures with cluster burn vulnerability results in significant mass casualty risk potential the plan does not analyze or disclose.

"Warnings by themselves do not motivate evacuation, people must perceive risk."[11] (Dash and Gladwin 2007 Abstract)

"As we see time and time again, for as much research as has been conducted on the issue of evacuation, our understanding of evacuation is extremely limited. Those expected to evacuate often do not, and those who should not evacuate at least in the estimation of emergency managers often do." (Dash and Gladwin. p. 3. Exhibit 9)

Furthermore, the modern phenomenon of misinformation permeating social media can disrupt what are intended to be "phased evacuations."

[10] Exhibit 8. Sorenson and Vogt, Results of An Investigation of the Effectiveness of Using Reverse Telephone Emergency Warning Systems in the October 2007 San Diego Wildfires, June 2009, p. 2.

[11] Exhibit 9. Nicole Dash and Hugh Gladwin. 2007. Evacuation Decision Making and Behavioral Responses.

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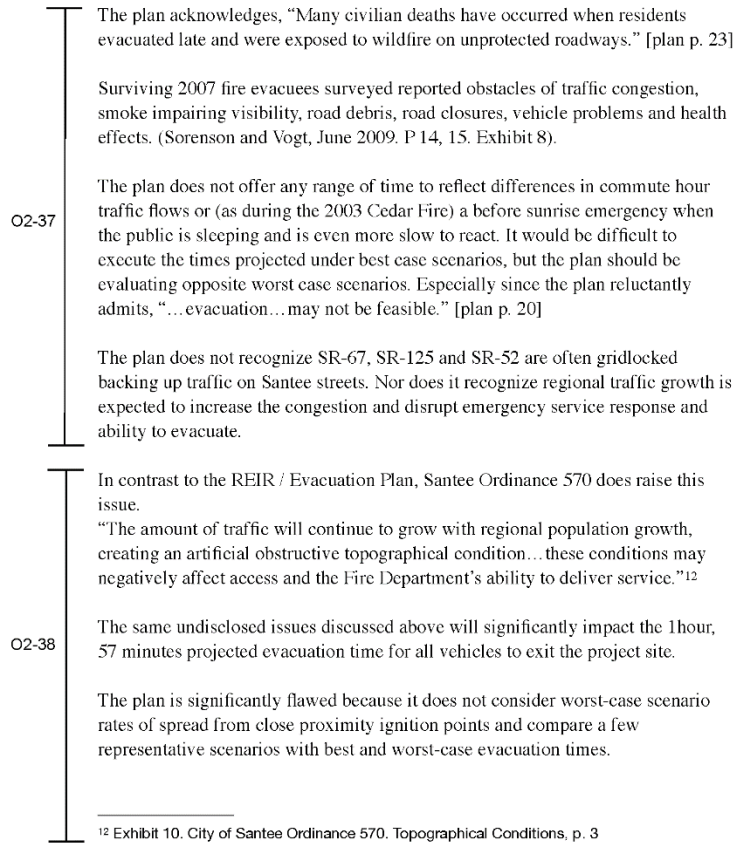
of the evacuation. Evacuation messaging is more efficient in 2022 than it was during previous fires. The messaging and alerting systems have matured considerably since 2007 with more avenues for reaching people and better technology to include the registered telephone numbers within the City, by area, as well as social media, television, radio, and on-the-ground and in the air procedures. Thus, it is likely that targeted populations of Santee would achieve a higher notification success rate today than circa 2007. The project is designed to protect structures and utilize fewer resources to protect the community based on the layered fire protection system as detailed in the Fire Protection Plan (Appendix P1) and Thematic Response 4 – Fire and Evacuation, specifically subsection 4d. Residents who ignore evacuation orders will be at less risk than presented in the comment because of the built-in system of protection and the ability to safely shelter populations on site. As cited in the Wildland Fire Evacuation Plan (Appendix P2), research indicates that the majority of people respond to evacuation orders provided by credible authority, which would be the case for evacuations at Fanita Ranch. However, because the project can provide safe temporary refuge for those who elect to ignore an evacuation directive, the result would be faster evacuations as there would be fewer people on the roadways. The comment speculates about misinformation on social media. In a wildfire, a managed evacuation event would be initiated and once the

first evacuees begin to leave, and follow the guidance provided as well as the on-the-ground direction through officers, intersection control, road closures, etc., the remainder of the evacuees will follow.



The plan acknowledges, "Many civilian deaths have occurred when residents evacuated late and were exposed to wildfire on unprotected roadways." [plan p. 23]

Surviving 2007 fire evacuees surveyed reported obstacles of traffic congestion, smoke impairing visibility, road debris, road closures, vehicle problems and health effects. (Sorenson and Vogt, June 2009. P 14, 15. Exhibit 8).

O2-37

The plan does not offer any range of time to reflect differences in commute hour traffic flows or (as during the 2003 Cedar Fire) a before sunrise emergency when the public is sleeping and is even more slow to react. It would be difficult to execute the times projected under best case scenarios, but the plan should be evaluating opposite worst case scenarios. Especially since the plan reluctantly admits, "…evacuation…may not be feasible." [plan p. 20]

The plan does not recognize SR-67, SR-125 and SR-52 are often gridlocked backing up traffic on Santee streets. Nor does it recognize regional traffic growth is expected to increase the congestion and disrupt emergency service response and ability to evacuate.

In contrast to the REIR / Evacuation Plan, Santee Ordinance 570 does raise this issue.
"The amount of traffic will continue to grow with regional population growth, creating an artificial obstructive topographical condition…these conditions may negatively affect access and the Fire Department's ability to deliver service."[12]

O2-38

The same undisclosed issues discussed above will significantly impact the 1hour, 57 minutes projected evacuation time for all vehicles to exit the project site.

The plan is significantly flawed because it does not consider worst-case scenario rates of spread from close proximity ignition points and compare a few representative scenarios with best and worst-case evacuation times.

[12] Exhibit 10. City of Santee Ordinance 570. Topographical Conditions, p. 3

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O2-37: The comment quotes the Wildland Fire Evacuation Plan (Appendix P2) out of context and only partially. The purpose of the full statement is to highlight that in instances where people have lost their lives, they ignored evacuation orders until it was too late and their property was not able to provide safe refuge. This scenario would not occur at Fanita Ranch where emergency managers would evacuate people early, or if the fire ignited too close to evacuate some residents, they could refuge in their ignition-resistant residences or other on-site buildings. It is important to understand that late evacuations may include smoke and confusion. Late evacuations are ill-advised, but must occur in communities where there are no safe refuge sites as a contingency option. In contrast, the proposed project provides safe refuge sites. It is not possible to anticipate every potential evacuation challenge, and that is why evacuation plans are only valuable as overall planning and preparedness guides. Evacuations will be managed events and obstacles that arise will be addressed, as needed, through the ongoing preparations and planning that emergency management agencies undergo. The plan evaluates worst-case scenarios with input from the fire agency that would be actively involved in managing an evacuation event. Further, evacuation in some scenarios may not be feasible, or the best option may be temporarily sheltering people on site. Only a small number of wildfire scenarios include evacuation of the entire project.

Depending on the fire scenario, there may be a very small relocation of specific populations or a larger relocation of residents to other on-site areas or off-site, if that is considered an appropriate action. The comment fails to understand that during evacuations, traffic management does not follow day-to-day patterns. When there is congestion on roads that need to be utilized to move populations that are at risk of exposure to the wildfire, downstream intersections are controlled through signal management, field personnel, closure of on-ramps and/or cross streets, and similar actions that move traffic on high priority roads. The evacuation management agencies include numerous government departments that mobilize personnel to assist in these efforts and has demonstrated a high level of successful evacuations that have improved over time due to significant investments in technology, resources, and training.

O2-38: This comment does not consider emergency evacuation traffic management, as described in response to comment O2-37, in comparison to day-to-day traffic. Fire and emergency response are adept at delivering service and during evacuations, coordinate with numerous agencies to provide alternatives that move populations at risk. Because the comment provides no substantive evidence for its expressed opinion, no additional response is required. The City disagrees that the Wildland Fire Evacuation Plan (Appendix P2) is flawed and that it does not analyze a

worst-case scenario. Vicinity ignitions would still enable some populations to leave the area due to the redundant access points, but this may not be the first option because Fanita Ranch's design has planned for this scenario, with the ability to temporarily shelter its population in place. The comment assumes that all persons would be evacuated in all fire scenarios. This is incorrect, and reflects an antiquated understanding of modern wildfire evacuation strategies. Further, this approach ignores how evacuation are managed today based on the available resources and technological advancements that have occurred.

Furthermore, the plan asserts there will be the luxury of phased evacuations without considering potential rates of spread from highly probable ignition sources such as SR-67.

An extreme weather fire spreading from SR-67 at 1,966.5 feet/minute (Fanita Ranch Fire Protection Plan BehavePlus calculation) could strike the project in less than 10 minutes.

O2-39 "The Highway 67 corridor presents a serious threat as a ready source of potential ignitions resulting from vehicle accidents, over-heated vehicles and burning material thrown from vehicles during extreme fire weather conditions brought about by drought and drying seasonal Santa Ana winds. During the October 2003 wildfires, Incident Reports noted wind gusts of up to 75 MPH from the northeast at higher elevations." Fanita Ranch Fire Protection Plan. 2007, p. 3. AR 018469]

[Vineyard Village]"Rock Point is vulnerable to ignitions at the SR-67 corridor within ten minutes or less under high velocity Santa Ana winds. Evacuation routes are vulnerable to direct flame impingement, radiant heat, and smoke. City reference to 'safe routes' for evacuation is unsupported and incorrect." Cleveland National Forest Supervisor - Retired, Anne S. Fege, Ph.D., M.B.A.

The plan makes distorted assertions about the extent of evacuations, suggesting the project site will not require complete evacuation because "mass evacuations" will no longer occur.

O2-40 "This type of evacuation, called a mass evacuation, is not used in Santee or San Diego County." [plan p. 10] The statement is not accurate. The Incident Commander size-up attempts to determine the rate-of-spread and path of the fire. This estimate (subject to changing fire weather/behavior) determines the extent of the evacuation, not some pre-determined phasing plan.

O2-41 The plan fails to understand or disclose that the Incident Commander (IC) evaluates current and expected fire behavior and then issues evacuation directives based upon what is actually in the expected fire path. The IC uses Public Safety Grid Maps to identify at risk populations and communicate directives. The size of the evacuation is primarily determined by the expected rate-of-spread from the

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O2-39: The comment suggests that rates of fire spread are not considered. In fact, rates of spread may vary considerably under various weather conditions. Rates of fire spread would be evaluated during an actual event through real-time situation awareness as evacuations are being considered. The scenarios modeled in the Wildland Fire Evacuation Plan (Appendix P2) included SFD input for scenario selection. These scenarios would enable phased evacuations. In other scenarios, such as an ignition off the SR-67, phased evacuations may include phasing internally to move perimeter populations to internal project areas or off-site while other Fanita Ranch populations are provided warning messages to prepare to take protective actions which may include remaining in their protected homes. Under this scenario, a focused relocation/evacuation may occur with the majority of the community sheltering in place because they are not threatened by the wildfire. Any roadway may present a potential for ignitions if there are ignitable fuels nearby. This fact was analyzed within the Fire Protection Plan and appropriate protections provided, which are more targeted and aggressive than required by the 2007 Fire Protection Plan the comment quotes. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, for details. The comment references a quote from the 2007 Fire Protection Plan. In fact, the evacuation routes for the proposed project include wide fuel modification zones on either side and would be

used to evacuate as long as emergency managers considered it a safe option. If considered unsafe, evacuations would transition to on-site relocations or temporary sheltering. This program is superior to communities that do not have the same ignition resistance levels and cannot provide a contingency to a potentially unsafe evacuation.

O2-40: This comment questions the extent of evacuations from the project site. Mass evacuations are not the standard protocol, as confirmed by SFD and wildfire evacuation experts at Dudek. If time is available, large populations will be evacuated if necessary as long as it is safe to do so. When time is not available, and in some scenarios even if time is available but the fire does not represent a threat to the greater Fanita Ranch community, partial relocations to on-site areas away from the perimeter or off-site evacuations of some populations may be enacted. Mass evacuations of existing Santee neighborhoods were not enacted for the 2003 Cedar Fire, which is considered a worst-case fire for this area. Please refer to response to comment O2-39 for more regarding evacuations and to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for additional details. The comment is correct that size-up assessments, fire spread estimates, and populations at risk determine the evacuation breadth and scope. However, mass evacuations are not the standard protocol and with the assistance of real-time

fires active fronts and flanks during size-up, not by utilizing a planners idea of what may constitute most efficient evacuation phasing.

It is both plausible, and highly likely that evacuation orders could be issued for the entire project site (Public Safety Grid & Evacuation Planning Map Book page 224)[13] and for offsite populations on adjacent page grids simultaneously during a Santa Ana wind driven firestorm when evacuation needs are immediate or imminent.

O2-41 cont.

Because the bias of the plan is to support development, the plan wishes to relegate ignition points and rate-of-spread to secondary considerations. Consultant planners refused to even calculate basic evacuation timing without a court order.

The plan does not even disclose the existence of Public Safety Grid & Evacuation Planning Map Book page 224 and invents an entirely new phasing proposal that is unlikely to be reviewed or available to emergency responders prior to or during the next wind driven firestorm.

It is also distorted to cite (Sorensen and Vogt) for support, when Fanita planners have resisted our requests to estimate evacuation times and compare those to expected rates of spread. Sorenson and Vogt support the issue we brought to court, "accuracy of evacuation time estimates should be established."

O2-42

"Our research identified ten major issues in evacuation planning that cut across hazards. Planning for large-scale evacuations requires improvement. **A better understanding of special evacuation planning needs for fast-moving events is needed. Evacuation planning for concurrent hazardous events is lacking.** A better understanding of human behavior in evacuations is desirable. The **accuracy of evacuation time estimates should be established.** Guidelines on reentry after an evacuation should be improved. Special populations planning requires further investigation. Liability for evacuation decisions should be resolved. Uncertainties

[13] Exhibit 11. Public Safety Grid Map page 224. PDF page 18.

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situation awareness applications and surgical evacuation area selection and notification, phased evacuations have become the primary approach.

O2-41: This comment claims the Wildland Fire Evacuation Plan (Appendix P2) does not understand or disclose the role of the Incident Commander (IC). The Wildland Fire Evacuation Plan (Appendix P2) is consistent with the comment's IC-managed approach. Evacuations are managed events (by the IC) and carried out by various agencies utilizing technology and on-the-ground personnel. There are no conflicts with the Wildland Fire Evacuation Plan (Appendix P2) regarding this concept. The plan states clearly that it is based on potential scenarios. The information in the Wildland Fire Evacuation Plan (Appendix P2) may be useful for emergency managers in regard to modeled travel times, but the plan acknowledges that evacuations are fluid events and will be managed appropriately based on various factors including fire spread rates. The comment regarding an entire map page being evacuated is possible, but not likely as it has not occurred in this area, even during the 2003 Cedar Fire. Also, please refer to responses to comments O2-39 and O2-40. The evacuation of the area would not be in conflict with the Wildland Fire Evacuation Plan (Appendix P2), which contemplates an area-wide mass evacuation event, but one that is managed according to the latest approaches and use of technological

advancements to reduce traffic congestion. The City disagrees that the Wildland Fire Evacuation Plan contains bias. The comment provides no evidence in this regard, merely unsubstantiated opinion. The SFD may utilize components of the Wildland Fire Evacuation Plan, particularly the modeled travel time estimates, within their pre-planning. The focus of the Wildland Fire Evacuation Plan is not to replace evacuation methods executed by emergency management agencies, but to provide a CEQA-level evaluation of potential scenarios and how they could be managed to minimize potential impacts to persons. The Map Book page 224 is irrelevant to this effort and was specifically avoided to eliminate the potential for resident and other reviewer confusion.

O2-42: This comment questions the use of the Sorenson and Vogt citation in the Recirculated Sections. The Sorensen and Vogt citation is accurate and supports the Wildland Fire Evacuation Plan (Appendix P2) prepared for the project. The rate of spread concern expressed in the comment is largely negated due to the fact that evacuation from the site is not the only option. Evacuations that are underway can be halted if a fire spreads close enough that it would endanger evacuees. Residents and visitors can be directed to temporarily remain on site at designated shelters or in their protected homes. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for a thorough response to this concept. Therefore, the

comparison of evacuation times against fire spread rates is unnecessary. The comment also provides references from a research article. The referenced information is consistent with evacuation planning in San Diego County and Santee. The region has experienced large and small evacuations numerous times over the last 25 years and based on experiences, has improved all facets of evacuation management. Each of the findings expressed in the comments have been practiced and improved through investments, technological advances, additional human resources, and other physical resources that help emergency managers understand the fire‘s behavior, project where it will move, and target populations for evacuation ahead of the fire‘s arrival. This is standard in San Diego County and has been successfully executed many times, including during the 2017 Lilac Fire. The project’s professional Evacuation Planners have not resisted analysis, having conducted extensive analysis using sophisticated modeling software. Sorenson and Vogt are researchers who have expressed opinions regarding evacuations. These opinions are not codified as requirements for evacuation planning. Many of the concepts that they present are not applicable at Fanita Ranch because evacuation is not the only option. Sorenson and Vogt‘s recommendations are based on the need to move all people out of an area when a wildfire is advancing. That is not the case at Fanita Ranch due to the ability to refuge people on site. Hence, Sorenson and

and problems in evacuation decision-making need greater attention. Adoption and implementation of integrated evacuation plans should be investigated."[14] (John Sorenson, Barbara Vogt and Dennis Mileti)

O2-42 cont.

Sorenson confirms the importance of **"evacuation time estimates"** in later research. (Sorenson 2002)

Fanita planners have resisted analysis of the issues Sorenson and Vogt conclude deserve attention and this plan does little to address those issues identified.

Plan section 3.3.1 Evacuation Points and Shelters is generic word soup that does not offer any specific locations on or off of the project site expected to function as evacuation points or shelters. This is a significant deficiency in the plan which fails to establish if suitable evacuation points or shelters exist for the populace during events of magnitude. Specifically, where are these suitable points or shelters and what facts establish them as suitable functionality for large evacuation events?

The plan acknowledges that shelter-in-place is not preferred for residents that would be "directly impacted or in the direct path of a hazard." [plan p. 22] Yet, all of the project site could be impacted within a short interval of minutes during a wind driven fire with a rapid rate-of-spread or with simultaneous area ignitions. The plan labels structures as "ignition resistant," not ignition proof, which places the resident population in significant danger. The REIR use the term "minimize ignitions." [REIR 4.18-42, Fanita Ranch Fire Protection Plan May 2022 p. 38]

O2-43

The plan downplays and deflects from the significant risk of shelter-in-place strategy by pointing to three large fires without resident injuries or structure loss, and by failing to disclose the destruction of other large fires with structures built to fire resistant standards.

The 2018 Camp Fire burned 18,804 structures in Paradise. Post fire analysis concluded 56% of the structures built to 2008 Chapter 7A standards were

[14] Exhibit 12. John Sorenson, Barbara Vogt and Dennis Mileti. Evacuation: An Assessment of Planning and Research. 1987. Abstract.

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Vogt's research is informative, but does not consider an evacuation option and is largely inapplicable to the Fanita Ranch's evacuation analysis.

O2-43: This comment questions the evacuation points and shelters of the proposed project and compares the project to the 2018 Camp Fire. The Fire Protection Plan (Appendix P1), in its Executive Summary, defines the Fanita Ranch buildings that would be designated for temporary sheltering. "The structures in the Proposed Project would be built to ignition-resistant standards per the California Fire and Building Codes and the Santee Municipal Code in effect at the time of building permit issuance. Chapter 7-A of the California Building Code and Santee Municipal Code focuses on structure ignition resistance from flame impingement and flying embers in areas designated high fire hazard areas. All of the site's structures (residences, commercial and retail buildings) could be utilized for temporary refuge during a wildfire. In addition, there would be several designated structures and protected open-air areas that would be enhanced to serve as temporary sheltering sites as a contingency plan if evacuation is considered undesirable. These sites would be designated with input from SFD and may include schools, Village Core, large parks, or other protected areas." The comment attempts to create unrealistic scenarios to counter the 'environmental analysis conducted for the project regarding the ability to utilize on-site sheltering in

lieu of evacuation in every instance. The term "ignition-resistant" is utilized consistent with that defined term in the California Building Code, Chapter 7A. Not all ignitions are preventable as accidents and oversights may occur. However, there are redundant, layered systems to protect the population at Fanita Ranch. In a wildfire scenario, it is likely that persons in some perimeter homes in the projected wildfire area may be relocated to other on-site areas, but there is no anticipation that a fire front will move through the wide FMZs into the project as there are not fuels to support this type of fire encroachment. The comment inaccurately suggests that fires where structures built to fire resistant standards were destroyed were ignored in the analysis. In fact, the large fires where buildings were destroyed do not include the same type of pre-planned and ongoing maintenance that would be required of Fanita Ranch. In most cases, embers destroyed the referenced buildings. They may have been built to more recent building standards, but did not include the same ember protection for vents, because it hasn‘t been a requirement in Chapter 7A of the building code until very recently. The code requires wire mesh on openings, but embers can still get through these openings. The project will utilize baffled vent assemblies that capture embers before they can penetrate into the building. The 2008 7A standards still had weaknesses that were not addressed – specifically ember protection on all openings. This, coupled with the lack of maintained defensible space, the

buildings within the forest/fuels, is why these structures were lost. This is very different than the design proposed for Fanita Ranch. There is no basis ‘to compare the Camp Fire in a pine forest with Fanita Ranch, which is within shrublands and with a very different, and superior managed fire protection system. This reflects a fundamental lack of expertise and experience in the subject matter. Embers were the key factor in Paradise as they have been on most wildfires in California. Note on the comment’s image how much of the native fuels remain intact while structures burned. This indicates embers penetrated the buildings, not that they burned from vegetation or even neighboring structures. Where structure-to-structure ignition occurred, it was likely due to lack of 7A standards and/or automatic sprinklers and the fact that the structures were vulnerable to ignition before the fire arrived.

destroyed.[15] https://wildfiretoday.com/2021/10/11/characteristics-of-structures-that-burned-in-the-2018-camp-fire/

O2-43 cont.

Home proximity to each other was a key factor. Homes with > 18 meters of separation survived at substantially higher rates than those in close proximity to another burning structure.[16] [Exhibit 14]

The Evacuation Plan / Final REIR ignores the Marshal Fire that burned about 1,000 structures within hours on December 30, 2021. The Marshal Fire demonstrates the potential for rapid destruction of fire resistant homes placed in close proximity. Drone video aftermath reveals the destructive potential for homes in close proximity with little adjacent vegetation fuels. Homes became the fuel. Video documents homes that survived had fewer homes in close proximity.

O2-44

The community impacted by the Marshal Fire had more numerous points of ingress/egress differentiating it from the constrictive congestion of Fanta Ranch dependency upon Mast Boulevard. Shelter-in-place strategy is a recipe for failure in densely configured sites in severely vulnerable topography such as Fanita "Vineyard Village."

Denser development, such as what is proposed for Fanita, built to Chapter 7A standards, may protect the structures from direct flame impingement of a vegetation fire burning under moderate weather conditions, but density design becomes a detriment once buildings ignite and cluster burn.

The plan fails to disclose destruction of 20 mansions by a 200-acre fire in Laguna Niguel, May 11, 2022. The spring wildfire burned adjacent to the ocean during onshore flow wind gusts of 20-25 mph. This was not a Santa Ana condition. Homes were immaculate and compliant with PRC Section 4291 defensible space code. Proximity of structures doomed them once the initial home ignited from the

O2-45

[15] Exhibit 13. Bill Gabbert Characteristics of structures that burned in the 2018 Camp Fire. October 11, 2021. Wildfire Today. https://wildfiretoday.com/2021/10/11/characteristics-of-structures-that-burned-in-the-2018-camp-fire/

[16] Exhibit 14. Knapp, E.E., Valachovic, Y.S., Quarles, S.L. *et al.* Housing arrangement and vegetation factors associated with single-family home survival in the 2018 Camp Fire, California. *fire ecol* **17,** 25 (2021). https://doi.org/10.1186/s42408-021-00117-0

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O2-44: This comment compares the proposed project conditions to the Marshal Fire. The Marshal Fire is not a valid comparison for Fanita Ranch for a number of reasons. First, the fire occurred in Colorado in grasslands. Second, the homes were not constructed to the same level of ignition resistance as California requires. In the Marshal Fire Operational After-Action Report, it is clear that the high winds were creating ember storms that ignited structures randomly. It was also inferred that defensible space was not maintained and fire did burn from wildland into the community. Neither of these would occur at Fanita Ranch. One area where the Marshal Fire is similar to large San Diego County wildfire evacuations is that it confirms how a large population can be successfully evacuated in a very short time frame. Over 37,000 people were moved out of harm's way in 3 to 4 hours in an evacuation considered "unprecedented". However, from an ignition resistance and fire-safe perspective, it is not appropriate to compare the community in the Marshal Fire with Fanita Ranch. The communities are very different in terms of defensibility and the inclusion of layered, passive and active protections. Counter to the comment's suggestion, the Fanita Ranch project meets the strict California Fire Code requirements for access. See previous responses and Thematic Response 4 – Fire and Evacuation, specifically subsections 4a through 4e, for details regarding the difference between Fanita Ranch and the Marshall Fire

O2-45 cont.

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impacted community. The comment provides no evidence for its statement that housing density becomes a detriment. There is no research or actual fire after action reports that specifically document structures meeting the stringent ignition-resistant codes and providing defensible space as being prone to structure-to-structure ignitions, particularly since ember resistant vents would be fitted on every structure which is a significant feature shown to address the single most common way structures ignite during wildfires.

O2-45: This comment provides unsubstantiated opinions regarding the May 11, 2022, wildfire in Laguna Niguel, California. Orange County Fire Authority confirmed on July 27, 2022, that the structure losses were entirely due to ember penetration into structures built in the 1990s and not subject to the strict requirements of 2022. The provided image indicates a typical ember penetration caused wildfire where embers entered the attic and burned the house from the interior. The FMZ worked as designed but the homes lacked ember protection, unlike structures in Fanita Ranch which will be required to include specific ember resistant vents. The second image indicates wildfire in unmaintained fuels meeting FMZ and reducing in flame length, and spread rates. The comment ignores the age of the homes that were damaged and the lack of ignition-resistant construction meeting current code requirements. The comment's statements regarding weather and dry

downslope generation of firebrands. There is significant similarity in vulnerability from downslope vegetation on Fanita Ranch to close proximity home clusters above.

Fire resistant homes with PRC 4291 compliant defensible space ignited during a spring onshore wind driven fire. Coastal Fire, Laguna Niguel, 05/11/2022. https://www.ocregister.com/2022/05/11/fire-prompts-evacuation-at-laguna-beach-resort/

The weather was not extreme. The winds were under 25 mph and relative humidity was 52%.

'The big difference is, and were seeing it again, y'know, with the climate change," Fennessy said. "The fuel beds in this county, throughout Southern California, throughout the West are so dry that fire like this is going to be more commonplace. Five years ago, 10 years ago, a fire like this would likely have been stopped very small."[17]

O2-45 cont.

[17] Eric Licas. Coastal fire burns 20 homes, forces evacuations in Laguna Niguel. May 11, 2022. The Orange County Register. https://www.ocregister.com/2022/05/11/fire-prompts-evacuation-at-laguna-beach-resort/

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fuels and its effects on fire behavior are the type of fire behavior that was the baseline for Fanita Ranch's modeling and the project was designed to withstand worst-case fire behavior that would be possible for the fire environment on the Fanita Ranch. The Orange County Fire Authority's Fire Chief's statements about climate change are highly speculative and unrelated to the wildfire being contemplated in previous comments. Embers penetrating vents caused the homes to burn. In this example, embers entering through a window and igniting furniture or other flammable items would trigger interior sprinklers, which have a proven track record of suppressing and controlling internal ignitions and enabling the on-site fire fighters to respond to the fire. Regarding the reference to cluster burns in the Coffey Park neighborhood that was devastated during the 2016 Tubbs Fire, the structures were built in the late 1980s and homes that were lost were due to airborne embers entering unprotected openings. These home were vulnerable to cluster burns due to their non-ignition-resistant construction.

"With the climate change. The fuel beds are so dry that fire like this is going to be more common place. [Orange County Fire Chief Brian Fennessey, ABC News.] During unexpected ignition with rapid fire spread, it takes only one absent resident on Fanita who leaves a window open for fresh air to create vulnerability for an entire cluster of homes.

O2-45 cont.

See Exhibit 16 before and after Tubbs Fire aerials of high density cluster burns at Coffey Park and high-density destruction in the City of Ventura during the Thomas Fire.

O2-46

Significant cluster burn risk can be reduced by three modifications:

- **Eliminate all windows and garage doors on the north, northeast, east and southeast sides of structures / require air tight garage door seals**

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O2-46: This comment discusses modifications that can be made to reduce cluster burn risk. This comment provides no source or authority for the suggested design features. The risk of cluster burns in Fanita Ranch would be effectively managed as described in responses to comments O2-27, O2-30, and O2-45.

O2-46 cont.

- **Require a minimum of 50 feet between each structure (keep other structures out of Zone 1)**
- **Limit the number of windows on southern to northwest sides of structures to 1 per room, with an area limit of 9 square feet, constructed in a permanently closed design.**

Evacuation Plan Section 4 - Wildfire Scenarios

Without supporting data analysis and disclosure, the "Wildfire Scenarios" section of the plan excludes actual worst-case scenarios from consideration. Scenarios where ignition points are in close proximity to the project with spread rates at a magnitude to impact the developed site during a time period insufficient to evacuate the entire site are not adequately considered.

O2-47

"If a fire starts in the backcountry (East San Diego County) and is fanned by these fire weather conditions, an early evacuation of the area may occur several or more hours prior to actual threatening conditions. Such an evacuation may include the **entire project site**." [plan p. 25.]

I've provided data in prior comment letters documenting large-area/short-time-period scenarios are both plausible and likely. **The plan is significantly deficient because it refuses to do calculated ignition point / rate-of spread analysis with distressed fuels during extreme weather conditions and then avoid or mitigate for such a scenario's significant adverse impacts.**

I've asked for this analysis repeatedly. The court acknowledged in its ruling the EIR was inadequate because of the failure to respond adequately to public comments. The plan repeats this failure by the denial bias embedded in this section.

The plan then generally admits:

O2-48

"If a wildfire ignited close to the Fanita Ranch community during weather that facilitates fire spread (i.e., low humidity and high winds facilitate fire spread), multiple hours would likely not be available for evacuation and a different approach would need to be explored."

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O2-47: This comment discusses Section 4 of the Wildland Fire Evacuation Plan (Appendix P2) and claims certain scenarios were not considered. The comment's suggestion that wildfire scenarios where an ignition occurs close to the project site has not been considered is inaccurate. This scenario was considered. Please refer to the Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, and the Wildland Fire Evacuation Plan (Appendix P2) for details. In summary, were it was unsafe to move people off-site because a wildfire was in proximity, residents would be directed to shelter in place. This option negates the obsolete "must move all people off site" strategies because it was and is not an option in all communities, only those built to the levels of Fanita Ranch. The comment quotes from the Wildland Fire Evacuation Plan (Appendix P2), but raises no issues with the analysis. The comment's statement that fire spread analysis has not occurred is not accurate. The Fire Protection Plan and Wildland Fire Evacuation Plan analyze the site, reflect fire behavior modeling on worst-case conditions, and evacuation modeling of scenarios that were determined by fire experts to be the most probable events. As previously explained in responses to comments O2-44 and O2-45, the scenario requested has been evaluated according to realistic evacuation experience of emergency managers. Distant fire events have been modeled as well as closer ignitions. Because the

contingency option of refuge in place is available at Fanita Ranch, the modeling requested would result in no significant changes to the results and therefore is considered unnecessary. The comment requests that the City model additional scenarios that may occur during an evacuation. CEQA does not require the City to analyze every conceivable situation that may occur or engage in undue speculation regarding project impacts. A similar comment arose in League to Save Lake Tahoe Mountain etc. v. County of Placer (2022) 75 Cal.App.5th 63, 139–140, review denied (May 18, 2022), where a commenter requested consideration of situations where the evacuation route was blocked or someone at the end of the queue responded to embers and smoke drifting across the road. The Court of Appeal explained:

> Courts have made clear that "CEQA does not require evaluation of speculative impacts. (Guidelines, § 15145.)" (National Parks & Conservation Assn. v. County of Riverside (1999) 71 Cal.App.4th 1341, 1364.) "Agencies are not required to engage in 'sheer speculation' as to future environmental consequences of the project." (Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1145, quoting Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 738.)
>
> CEQA also does not require an analysis to be exhaustive. It is "not necessary that the analysis be so

> exhaustively detailed as to include every conceivable study or permutation of the data." (San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 666[]; Guidelines, § 15151.) " ' "[A]n EIR need not include all information available on a subject[;]"... [all that is required is] sufficient information and analysis to enable the public to discern the analytic[al] route the agency traveled from evidence to action.' [Citation.] 'A project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information.... That further study... might be helpful does not make it necessary.' " (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors (2013) 216 Cal.App.4th 614, 639-640.)

These points apply when we consider an EIR's review of a project's potential to disrupt implementation of an evacuation plan. It is difficult to predict how an actual evacuation will unfold and determine how a project may impact it. An evacuation is developed and directed in real-time by those conducting it in response to the unique conditions before them.

"CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive. (Guidelines, § 15151.)" (Kings County Farm Bureau v. City of Hanford, supra, 221 Cal.App.3d at p. 712.[]) "An EIR is required to

evaluate a particular environmental impact only to the extent it is 'reasonably feasible' to do so." (Rialto Citizens for Responsible Growth v. City of Rialto (2012) 208 Cal.App.4th 899, 937, []quoting Guidelines, § 15151.)

The EIR has modeled several reasonable scenarios and provided a reasonable explanation of how the project will affect residents' ability to evacuate and emergency responders' ability to access the area and the site. Evaluation of the commenter's suggested additional scenarios would be speculative and is not required by CEQA.

O2-48: This comment claims the proposed project did not take into consideration critical distances and time periods for worst-case fire scenarios. The City disagrees with the assertion that the environmental analysis does not take into account worst-case wildfire scenarios. The Wildland Fire Evacuation Plan (Appendix P2) analyzes realistic wildfire events and provides modeled evacuation travel times that are useful for planning purposes, and is based upon realistic scenarios developed by the Santee Fire Department and Dudek's wildfire experts, including a worst-case scenario (see Appendix D of Appendix P2, Wildland Fire Evacuation Plan). Further, the results inform emergency managers of the various options they have available so that during an evacuation event, decisions regarding evacuation, relocation, or on-site sheltering can be made quickly based on wildfire location,

What are the critical distances and time periods during worst case fire spread scenarios?

O2-48 cont.

The plan fails to consider and then avoid or mitigate for these circumstances. Furthermore - under the above scenario, there is not time to explore a "different evacuation approach." The time for exploration is now while significant deficiencies may still be addressed, not during the event when failures have real life consequences.

The 3 "contingency options" mentioned are to generalized. Please "explore" 1 - 2 - 3 specifics: [Evacuation Plan p. 25.]
"(1) partial relocation, where residents in perimeter homes on the north/west/ east edges are temporarily relocated to internal areas or to the Fanita Commons Village Center;"

How long would it take to relocate "residents in perimeter homes on the north/ west/east edges" to "internal areas of the Fanita Commons Village Center"?

What is the capacity of the Center?

Under what conditions is the Center at risk of significant failure?

O2-49

What is the contingency for failures at the Center after a partial evacuation there?

Is the Center designed with characteristics of a safety zone under a specified stress point or is the Center sufficient to be a Temporary Refuge Area up to a specified stress point?

Considering the Incident Commander uses a much more generalized Public Safety Grid Map system, specifically, how will evacuation of "residents in perimeter homes on the north/west/east edges" be timely and accurately communicated from the IC to the EOC, then law enforcement and to the targeted residents?

How will confusing messaging permeating through other neighborhoods whose actions could adversely impact the targeted evacuation be avoided?

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spread rates, and movement direction. This is standard evacuation management procedure.

O2-49: This comment includes several questions regarding timing to relocate evacuees and design of the Fanita Commons Village Center. In response to the comment's request for timing to evacuate, the length of time to move people is measured in minutes (see Appendix D of Appendix P2, Wildland Fire Evacuation Plan). Notification providing directions would be given directly to people in targeted areas. People would follow directions and move, and given the physical size of the community, driving to the designated area would take between 30 seconds and a few minutes. If a resident did not receive the message for some unforeseen reason, the safety net provided is that their home is considered highly ignition-resistant and is protected by wide FMZ areas, so can be used as an on-site shelter. There would be multiple areas available that can serve as refuge sites and as the Fire Protection Plan explains in the Executive Summary, the SFD would help determine which areas would be appropriate. Schools, Village Core, and parks are appropriate areas. Capacity of these areas would be appropriate for the targeted areas being relocated. Significant failure is not anticipated at these sites due to the layered and redundant fire protection system provided at Fanita Ranch. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a, 4b and 4d, for a thorough response and

details. There would be multiple designated refuge sites on Fanita Ranch and in the unforeseen scenario where one site is considered unsafe, people would be moved to another site. Movement within Fanita Ranch would be possible due to the redundant fire protection system that sets active wildfire far from roadways and internal areas. The designated on-site refuge areas are large parks, schools and the Village Center. During an evacuation, the appropriate refuge sites would be initially selected through the unified command post with law enforcement and SFD collaboration. As the incident evolves, Emergency Managers at the City and County levels would select longer term sites appropriately suited to accommodate the estimated number of evacuees. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for more details on evacuation procedures.

Areas under immediate threat are initially identified by law enforcement and fire units on scene. This communication is more often done face to face with deputies at the incident. Simultaneously, larger areas are identified based on an incident's potential threat. Immediately upon arriving on scene of an incident, a unified command system is set up between fire and law enforcement units. Other lead agencies identified in Annex Q, such as Caltrans, public works, or public health, would be added as appropriate. Information is relayed between

agencies in real-time with little delay through the unified command post. Future evacuation sites and areas to be evacuated are relayed through Sheriff's department dispatch for broadcast via Wireless Emergency Alerts (WEA) system, social media, etc. Evacuation areas can be targeted to the street level using the latest technology available through San Diego County's Emergency Operations Program. The WEA system allows 90 characters in each notification in order to give more precise details of specific areas or more granular, such as a street to evacuate, and additionally, the temporary refuge site location. This technology enables areas on maps to be pinpointed and phone lines associated with the addresses are automatically messaged. There are a variety of ways this can be managed. Targeted messaging to the intended populations, broader messaging indicating other areas are not included in the evacuation, on-site traffic management through road closures and intersection control are among the most likely to be implemented. Based on the advanced technology now employed for this purpose, the total time to enact the evacuation components requested in the comment is less than 5 minutes.

O2-49 cont.

If the IC chooses to request more specific areas for evacuation orders, what is the average amount of time it takes for the specific order to be prepared by the IC, communicated by the IC to the EOC and then translated digitally and distributed through WEA or AlertSanDiego systems to the public?

"2) individual neighborhood relocations, where residents of certain neighborhoods are temporarily relocated to the Fanita Commons Village Center or south to the Cities of Lakeside or El Cajon;"

Considering the Incident Commander uses a much more generalized Public Safety Grid Map system, specifically, how will evacuation of "certain neighborhoods" be timely and accurately communicated from the IC to the EOC, then law enforcement and to the targeted residents?

O2-50

How will confusing messaging permeating through other neighborhoods whose actions could adversely impact the targeted evacuation be avoided?
How long will it take to evacuate "certain neighborhoods" to "Lakeside or El Cajon."

How much delay time will be added to the evacuation of a vulnerable existing WUI from the evacuation of "certain neighborhoods"?

In what scenarios would existing Santee neighborhoods north of Mast Boulevard be evacuated prior to "certain neighborhoods" on the Fanita ranch project site?

If the IC chooses to request more specific areas for evacuation orders, what is the average amount of time it takes for the specific order to be prepared by the IC, communicated by the IC to the EOC and then translated digitally and distributed through WEA or AlertSanDiego systems to the public?

O2-51

"(3) temporary refuge, where residents are instructed to remain in their homes while firefighters perform their structure protection function."

What are the contingency options if/when structures fail and begin to cluster burn?

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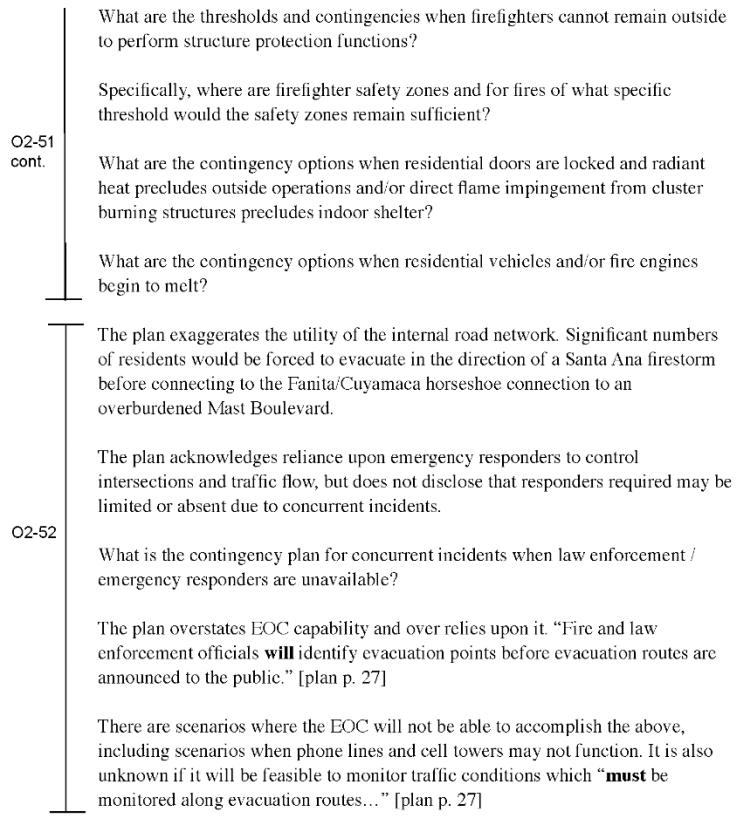
O2-50: This comment includes a series of questions regarding the relocation of evacuees and the effects it would have on surrounding communities. Please refer to response to comment O2-49 regarding the surgical evacuation approach. The process is the same through the use of technology that is designed for surgical notifications. Time needed to move people from neighborhoods out of the area will vary by the number of people actually moved. It is anticipated that the evacuation would be similar to the modeling scenario where residents of perimeter homes are moved and in this case, 19 minutes travel time was modeled (see Appendix D of Appendix P2, Wildland Fire Evacuation Plan). The amount of added evacuation time for existing neighborhoods would vary by the number of vehicles being moved, but as previously described, in a targeted evacuation, the additional time would be considered insignificant due to the limited number of persons being evacuated. Please refer to previous response to comment O2-49 as the process and time requirements is the same.

O2-51: This comment includes a series of questions regarding contingency options. Although not anticipated to occur as the comment suggests due to the layered fire protection system at Fanita Ranch, should a structure being used by a resident to temporarily refuge during a wildfire ignite, the person would be directed to relocate to an on-site designated refuge. Based on the wildfire behavior that

would be produced by the fuels off-site from the project, coupled with the wide FMZ areas at the perimeter and ignition-resistant landscapes throughout the project, there is no expectation that firefighters would not be able to defend the site's homes. The additional FMZ was specifically provided to enable defensible space based on the maximum heat and flame lengths that the shrubs can produce. Firefighters will be able to perform the function of structure protection. If in the unforeseen scenario where a structure ignites, residents would be moved to a designated on-site refuge. Safety zones are established by firefighters prior to or during a firefight. SFD would establish its safety zones as part of their pre-planning efforts. It is not within the scope of an Evacuation Plan or Fire Protection Plan to establish safety zones for a fire agency. However, anywhere on the site where the area meets the definition of a safety zone may be considered available to firefighters. Please refer to response to comments O2-27, O2-30, and O2-45 which describe why this scenario is not expected at Fanita Ranch. If this scenario did occur, firefighters are adept at gaining access to locked buildings when needed through whatever means necessary. Firefighters understand their options and would fall back to TRAs and/or safety zones according to their pre-plan. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, for details regarding the built-in defensible space setbacks that would separate firefighters and their engines as well as residential



What are the thresholds and contingencies when firefighters cannot remain outside to perform structure protection functions?

Specifically, where are firefighter safety zones and for fires of what specific threshold would the safety zones remain sufficient?

O2-51 cont.

What are the contingency options when residential doors are locked and radiant heat precludes outside operations and/or direct flame impingement from cluster burning structures precludes indoor shelter?

What are the contingency options when residential vehicles and/or fire engines begin to melt?

The plan exaggerates the utility of the internal road network. Significant numbers of residents would be forced to evacuate in the direction of a Santa Ana firestorm before connecting to the Fanita/Cuyamaca horseshoe connection to an overburdened Mast Boulevard.

The plan acknowledges reliance upon emergency responders to control intersections and traffic flow, but does not disclose that responders required may be limited or absent due to concurrent incidents.

O2-52

What is the contingency plan for concurrent incidents when law enforcement / emergency responders are unavailable?

The plan overstates EOC capability and over relies upon it. "Fire and law enforcement officials **will** identify evacuation points before evacuation routes are announced to the public." [plan p. 27]

There are scenarios where the EOC will not be able to accomplish the above, including scenarios when phone lines and cell towers may not function. It is also unknown if it will be feasible to monitor traffic conditions which "**must** be monitored along evacuation routes…" [plan p. 27]

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vehicles from wildland fire. The comment depicts a scenario where wildfire is burning through the Fanita Ranch community and that scenario is not possible due to the redundant, layered protections described in Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d.

O2-52: This comment claims the Wildland Fire Evacuation Plan (Appendix P2) puts too much reliance on the internal roadway system, emergency responders and EOC capabilities. The City disagrees with the unsubstantiated opinion expressed in this comment that internal roadways will be ineffective and that residents will be forced to evacuate in the direction of a firestorm. Law enforcement and partnering agencies will assemble robust human power and leverage all technological tools available to manage evacuation traffic. Those at highest risk are moved first and this includes controlling downstream intersections to make that happen. In scenarios where there are multiple incidents and/or areas needing immediate evacuation, additional cooperating agency personnel will be utilized to meet objectives. Residents evacuating for a short distance on familiar roadways in the same direction of a Santa Ana wildfire is irrelevant, as the evacuees would be driving within the development on protected, hardened, and familiar road corridors that are not exposed to wildfire. If an evacuation is occurring, key intersections would be controlled to keep traffic moving on key roadways,

including Mast Boulevard, thereby avoiding overburdening if that traffic needs to be moved in a short time frame. The comment provides an opinion that is not supported by facts or evidence and therefore requires no additional response. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for more information on evacuation management contingency planning. With regard to resources available in an emergency event, refer to response to comment I90-2. The City is a party to automatic aid agreements that would send firefighters from other jurisdictions to assist, if needed. Further, with wildfire, CALFIRE would send resources, depending on the wildfire's size and potential, and may include significant resources and aerial firefighting resources. Even in the event of multiple fires, significant firefighting resources would respond through the automatic and mutual aid programs. A scenario in which no emergency responders are available to assist the evacuation of Fanita Ranch is speculative and unreasonable.

Evacuation Plan Section 5 - Fanita Ranch Resident Fire/Evacuation Awareness

"There are aspects of fire safety and evacuation that **require** a significant level of awareness by the residents and emergency services to reduce/or avoid problems with an effective evacuation." [plan p. 29]

Ready, Set, Go! (RSG) brochures/procedures are useful tools, however their utility is overstated. RSG does not provide the required significant level of awareness.

I have distributed RSG brochures to thousands of residents in San Diego County while performing Defensible Space Inspections. Without engaging in question/ answer discussions during and after distribution of RSG, an assessment of residents comprehension of RSG and their ability to execute upon it or fulfill the **"required"** "significant level of awareness" is absent.

O2-53

Experience has demonstrated to me that redundancy of concept and repeated exercise of it (practice) is necessary to achieve a "significant level of awareness." There is not any evidence the Fanita plan will achieve either.

The redundancy of concept measures described in the plan are infrequent, voluntary and inadequate to achieve a "significant level of awareness" for the bulk of the resident population.

Registration for the "AlertSanDiego" emergency notification is a primary talking point during my public contact inspections. Out of thousands of public contacts, many have stated they would register, but a relative few requested or accepted offers to be walked through the short registration process (Most people can register in two to three minutes). Therefore, it is unknown how much redundancy is required to gain registration action from a public contact. Especially since much of the public in San Diego County remains unregistered.

Furthermore, existing Santee residents are unaware of or participating in the type of educational activities promised for future Fanita Ranch residents, which puts in question the feasibility of those promises in the plan.

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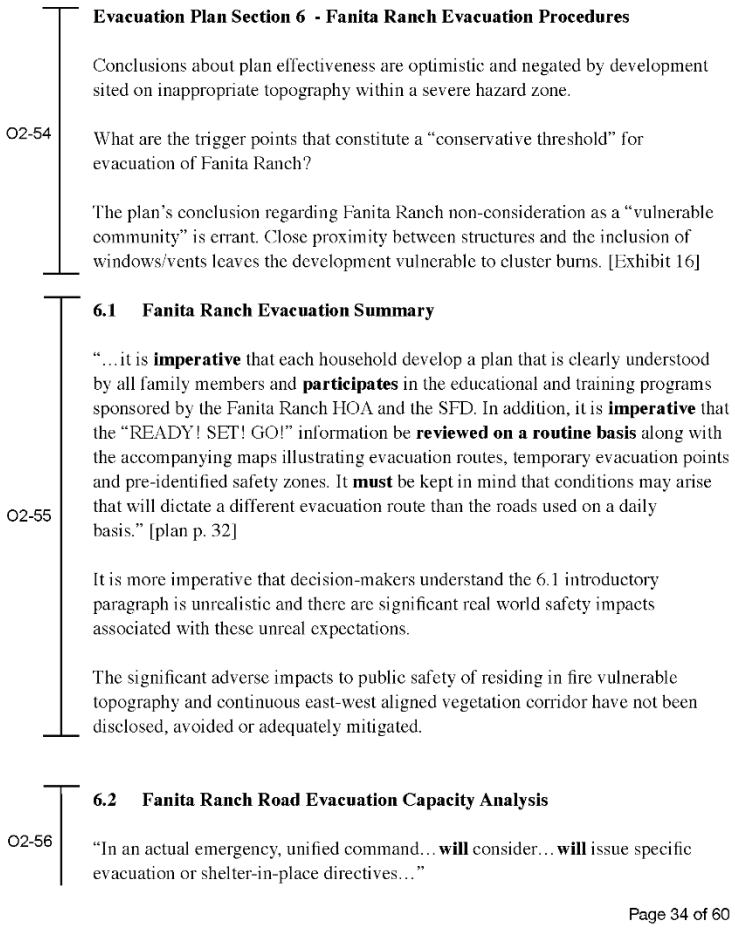
O2-53: This comment discusses Section 5 of the Wildland Fire Evacuation Plan (Appendix P2).Refer to responses to comments O2-35 and O2-36 with regard to the Ready, Set, Go! Program (RSG). The RSG brochures are provided for awareness and preparedness of residents and would be followed up with regular outreach by the HOA, as described in Chapter 7 of the Fire Protection Plan (Appendix P1). The brochures are not provided as the sole source of evacuation preparedness for the Fanita Ranch community. The comment ignores provisions for ongoing information and feedback regarding RSG. Chapter 7 of the Fire Protection Plan details how the HOA would provide outreach and educational information for its population regarding wildfire and evacuations. The comment ignores evidence of an ongoing outreach plan. Please refer to the Fire Protection Plan for details on the redundancy and repeated nature of the evacuation educational outreach and which are conditions of the project's approval. In addition, the new fire station provides opportunities for community engagement, training events, and dialogue around wildfire and evacuations. The comment regarding AlertSanDiego is noted, but raises no new issues that have not been adequately analyzed. The HOA would be actively pursuing registration in this program for all residents. In addition to AlertSanDiego, there are numerous other opportunities for noticing residents of an evacuation, as detailed in the Wildland Fire Evacuation Plan. This

comment is unclear as it seems to indicate existing Santee residents are not participating in educational activities that are being promised by Fanita Ranch to its future residents. The Fanita Ranch HOA would outreach to its residents to raise awareness and preparedness and would not be obligated to train existing Santee residents.



Evacuation Plan Section 6 - Fanita Ranch Evacuation Procedures

Conclusions about plan effectiveness are optimistic and negated by development sited on inappropriate topography within a severe hazard zone.

O2-54

What are the trigger points that constitute a "conservative threshold" for evacuation of Fanita Ranch?

The plan's conclusion regarding Fanita Ranch non-consideration as a "vulnerable community" is errant. Close proximity between structures and the inclusion of windows/vents leaves the development vulnerable to cluster burns. [Exhibit 16]

6.1 Fanita Ranch Evacuation Summary

"…it is **imperative** that each household develop a plan that is clearly understood by all family members and **participates** in the educational and training programs sponsored by the Fanita Ranch HOA and the SFD. In addition, it is **imperative** that the "READY! SET! GO!" information be **reviewed on a routine basis** along with the accompanying maps illustrating evacuation routes, temporary evacuation points and pre-identified safety zones. It **must** be kept in mind that conditions may arise that will dictate a different evacuation route than the roads used on a daily basis." [plan p. 32]

O2-55

It is more imperative that decision-makers understand the 6.1 introductory paragraph is unrealistic and there are significant real world safety impacts associated with these unreal expectations.

The significant adverse impacts to public safety of residing in fire vulnerable topography and continuous east-west aligned vegetation corridor have not been disclosed, avoided or adequately mitigated.

6.2 Fanita Ranch Road Evacuation Capacity Analysis

O2-56

"In an actual emergency, unified command…**will** consider…**will** issue specific evacuation or shelter-in-place directives…"

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O2-54: This comment discusses Section 6 of the Wildland Fire Evacuation Plan (Appendix P2). This comment provides an opinion unsubstantiated by evidence or analysis. Refer to Recirculated Section 4.18 – Wildfire, the Fire Protection Plan (Appendix P1), Wildland Fire Evacuation Plan (Appendix P2) and Thematic Response 4 – Fire and Evacuation, specifically subsections 4d and 4e, for analysis of fire risk at Fanita Ranch. Regarding evacuations, trigger points would be established by the IC with the aid of wildfire situation awareness. Wildfire location, spread rate and direction, along with advanced modeling occurring in real-time inform the IC regarding thresholds. It is possible to establish evacuation thresholds prior to a wildfire, but their usefulness is best at the planning level as each wildfire is unique and would require threshold adjustments in real-time. Therefore, evacuation thresholds are not established within a CEQA document. As previously described, cluster burns are possible for structures that have vulnerabilities to embers and include construction materials and methods that are not consistent with the latest ignition-resistant features that will be applied at Fanita Ranch. The threat of cluster burns in a community built to the level of ignition resistance as Fanita Ranch has not been documented. Commenters attempt to equate cluster burns in past wildfires involving fire-vulnerable structures with what would happen in a new development like Fanita Ranch, but they are

comparing very different communities that relegates them as invalid comparisons. The risk of cluster burns in Fanita Ranch would be effectively managed as described in responses to comments O2-27, O2-30 and O2-45.

O2-55: This comment claims the introductory paragraph in Section 6.1 of the Wildland Fire Evacuation Plan (Appendix P2) is unrealistic and that there are significant impacts to public safety. The City disagrees with the opinion expressed in this comment. The comment inaccurately states that impacts of Fanita Ranch's fire environment have not been adequately disclosed, avoided or mitigated. The Fire Protection Plan (Appendix P1) thoroughly evaluates the fire environment and models the types of worst-case wildfire that may occur. In addition, the Fire Protection Plan mitigates the known structural vulnerabilities through ignition-resistant features. Further, the Fire Protection Plan details a layered fire protection system with built-in redundancies so that no single feature is relied upon solely for protection of the structures or persons residing in them. Please refer to Thematic Response 4 – Fire and Evacuation specifically subsection 4d for details of this system.

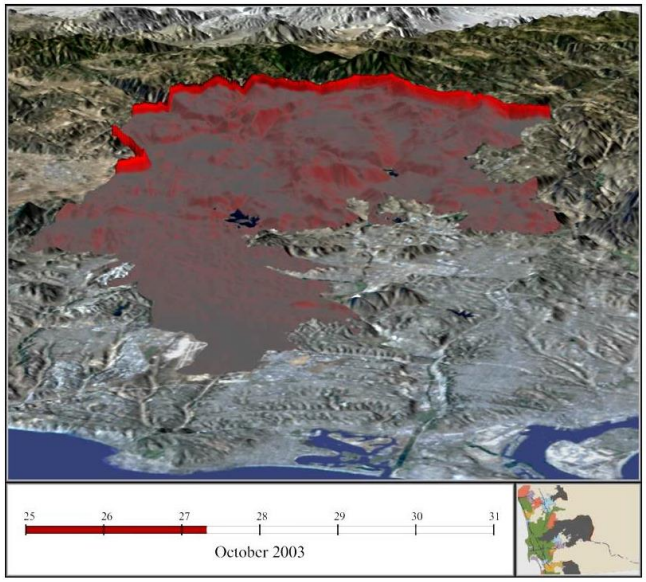
O2-56: The comment begins with a quote from Wildland Fire Evacuation Plan (Appendix P2), highlighting the word "will." Variations in the evacuation process may occur, but the process of evacuations throughout San Diego County

The language above creates a false narrative that in itself is a significant impact to public safety.

O2-56 cont.

There can be no guarantee that there WILL be enough trained/experienced personal or enough time to effectively consider "numerous factors including wind speeds and direction, humidity, topography, fuel loading, emergency access routes, evacuation routes, shelter-in-place options, time needed to evacuate, and other variables." [plan p. 11]

O2-57



Note the Cedar Fire rate of spread was underestimated by law enforcement and experienced fire officials in both premiere wildand firefighting agencies.

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is very sophisticated and it is appropriate to state that these actions "will" occur. The Wildland Fire Evacuation Plan (Appendix P2) does not provide guarantees. Rather, it describes standard operating procedures that are practiced by trained personnel who have had significant experience evacuating people during wildfires. Evacuations occur quickly when necessary. These types of evacuations are based on the responding fire and law enforcement personnel who size up the fire and make immediate decisions regarding fire threat, resource needs, and evacuations. Larger fires are associated with longer time frames where the resources to plan and project fire spread and necessary evacuations can be adequately explored, but that is not the case on all fires. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b.

O2-57: This comment claims the analysis relies on a false narrative and provides a visual and reference to the Cedar Fire. The City disagrees with the assertion that the environmental analysis relies upon a false narrative. Rather, it relies upon expert analysis and experience and the most recent technology and strategies used by emergency responders in the event of wildfire emergencies. Please refer to response to comment O-56 regarding the Wildland Fire Evacuation Plan (Appendix P2). Regarding the comments referencing the Cedar Fire and visual provided, the experience and resources

"Fire and law enforcement personnel underestimated the potential size and rate of spread of the Cedar Fire."[18] [Exhibit 17. United States Forest Service, California Department of Forestry and Fire Protection]

Underestimation should be expected because of the human brain's inability to comprehend exponential growth/fire spread. Yet, the plan inappropriately forecasts expert precision.

O2-57 cont.

"…exponential growth is beyond our natural intuition and comprehension. That's why any phenomenon involving exponential growth is potentially dangerous, why mathematics provides the only tool we have to handle it, and why leaders and societies can do themselves and us possibly irreparable harm…if they ignore what the math tells them."[19] [Exhibit 18. Mathematics Association of America]

Leading the public to believe and **rely upon** a false narrative of reliably accurate dispersal of directives has been deadly and can be again in high risk settings as the frequency of extreme weather events increase.

For example, during the 2018 Camp Fire, a mother and daughter had divergent positions on the issue of waiting for official direction. The mother chose to wait for specific directive and without any, chose to shelter-in-place until getting direction. The daughter felt uncomfortable, but lost time trying to persuade her mother to evacuate with her. The mother perished in her home waiting for direction that never came. The daughter survived a harrowing evacuation, where others did not.

O2-58

[18] Exhibit 17. United States Forest Service, California Department of Forestry and Fire Protection. 2003 San Diego County Fire Siege Fire Safety Review, p. 15 https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5297020.pdf

[19] Exhibit 18. Keith Devlin. Can We Really Understand Exponential Growth? June 1, 2020. Mathematics Association of America. https://www.mathvalues.org/masterblog/can-we-really-understand-exponential-growth

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available now that were not available in 2003 when that fire occurred are significant. Real-time monitoring and data streams, fire movement, modeling ahead of the fire and weather data all combine to provide situation awareness that is reliable and practiced in fires since 2003. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, regarding available resources and technology that were not available in 2003. There would not be a reliance on any one human for estimating fire spread rates. Models have already been used to reliably predict spread rates and would be updated in real-time based on actual conditions.

O2-58: This comment further claims the analysis relies on a false narrative and references the Camp Fire. The City disagrees with the assertion that the environmental analysis relies upon a false narrative. Rather, it relies upon expert analysis and experience and the most recent technology and strategies used by emergency responders in the event of wildfire emergencies. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4e, for details on why comparing an ignition-resistant community in a sparse, shrub dominated landscape such as the proposed project with older, vulnerable buildings within a forest setting like the 2018 Camp Fire is not a valid comparison. Residents in Paradise had very few options available to them, unlike Fanita Ranch, which offers emergency managers several potential options for

"Christina and her mother argued on whether to evacuate and ultimately her mother decided to stay put because she had not heard evacuation orders from officials."[20]

"They argued about the neighbor, showering, paying the phone bill, packing the safe, talking to a woman named Mary, the bumper-to-bumper traffic outside, the severity of the fire and God. They argued over evacuating."[21] [22]

Furthermore, as residents experience the dynamics of one or more fires, the basic experience can lead to a false sense of security that disarms residents to more serious dynamics in subsequent events. Emergency fatigue is an unconsidered significant adverse impact.

""She didn't expect it to be that bad. She expected someone would be calling, or something, if it got bad. But they didn't."[23] [Exhibit 22. NBC News]

O2-58 cont.

Note that law enforcement reported mass alerts were sent: "5,227 by email, 25,643 via phone (to both land lines and cellular devices) and 5,445 by text message… Like other counties, Butte has a system that allows residents to sign up for "reverse 911" telephone alerts in times of emergency." [Exhibit 22. NBC News]

Law enforcement after the fact statements support the significance of emergency fatigue upon the population and public safety officials themselves.

[20] Exhibit 19. Yaritza Avon. Chico State student loses mother and Paradise home during the Camp Fire. December 5, 2018. The Orion. https://theorion.com/77084/news/chico-state-student-loses-mother-and-paradise-home-during-the-camp-fire/

[21] Exhibit 20. Bianca Quilantan. December 19, 2018. "I want my mom back" Camp Fire survivor recounts final moments with her mother. San Jose Mercury News. https://www.mercurynews.com/2018/12/19/i-want-my-mom-back-camp-fire-survivor-recounts-final-moments-with-mother/

[22] Exhibit 21. Briar Stewart. 'This is where they must have found her:' Women who refused flee California fire is one of the dead. November 22, 2018. CBC News. https://www.cbc.ca/news/world/california-paradise-wildfires-1.4915372

[23] Exhibit 22. James Rainey. Paradise Fire survivors say warning were too little, too late. November 14, 2018. NBC News. https://www.nbcnews.com/news/us-news/paradise-fire-survivors-say-warnings-were-too-little-too-late-n935846

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evacuation or on-site sheltering. The project provides a comprehensive analysis of the wildfire threat and efficacy of evacuation and maintaining safe conditions for Fanita Ranch residents and visitors. Emergency fatigue is a speculative concept and is beyond the scope of an EIR technical analysis. The comment quotes from a news interview regarding evacuation issues. The comment does not raise an issue that has not been thoroughly addressed in the EIR and its technical reports. The details provided in Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, regarding fire and evacuation safety at Fanita Ranch were not in place in Paradise and the outcome from wildfire would be dramatically different due to the presence of these features at Fanita Ranch and the major differences in the fire environment between the two areas. The comment raises important topics regarding personal responsibility for residents in San Diego County, where fire hazard severity zones occur virtually anywhere outside developed areas and deserts. However, when part of a master-planned community built to the standards as Fanita Ranch, personal responsibility still exists, but is not as critical as in a large lot or rural setting. The protections provided by the community's built-in features alleviates some of the personal responsibility by providing a "buffer" where wrong decisions at the wrong time will not automatically result in major ramifications. The Fanita Ranch

O2-58 cont.

"You have to keep in mind that this was an extraordinarily chaotic and rapidly moving situation. The fire started in a remote area. It takes awhile for our fire resources to get there and from that point, trying to determine the path of travel and whether or not that's going to effect populated areas, that takes time," Honea said.

He added that it's possible some people were warned and didn't immediately act to get out of harm's way. "We were trying to move tens of thousands of people out of an area very rapidly with the fire coming very rapidly. And no matter what your plan is to do that, no plan will ever work 100 percent when you are dealing with that much chaos."

Honea, who took office four years ago, also suggested that emergency officials have to be concerned not to over-burden people with excessive or unneeded evacuation orders. He said the region had already lived through evacuations from earlier fires and last year's threatened collapse of the Oroville Dam, which caused nearly 200,000 people to flee.

"So that takes a toll on people," Honea said. "I don't want to ever get into situation where people begin to stop paying attention because they feel like we are ordering evacuations for no cause or for very little cause." [Exhibit 22. NBC News]

As an experienced wildland firefighter and currently as a Cal Fire Defensible Space Inspector performing public outreach, when I discuss emergency alerts with the public and request registration with the AlertSanDiego system, I let individuals know that an alert may not be issued. And when an alert is issued, they will only receive the alert if they have service at their present location at that time. It is up to individuals to grasp the vulnerabilities of their physical location, preplan evacuation routes and safety zones with representative scenarios, maintain situational awareness and act upon their own judgement if required by circumstances. Official alerts/directions are to be taken seriously to guide actions if issued and received. **The difficulty of evaluating physical settings in dynamic circumstances for both officials and residents is why it is gross negligence for land use officials to intentionally site new residents into increasingly severe hazard zones.**

community offers multiple contingency options that are not available in other communities. The comment ignores the differences of Fanita Ranch to other more vulnerable communities and offers an opinion that is not supported by evidence. The comment confuses a master-planned community with extensive protections to the types of wildfire threats that may occur with back-country, older, more vulnerable residential conditions where firefighters may find themselves in positions that are untenable. This would not be the case at Fanita Ranch. The buffers and fallback options available provide PACE (Primary, Alternative, Contingency and Emergency) options to firefighters to avoid placing themselves in significantly dangerous positions.

The plan's false narrative of guaranteed expert direction from public safety agencies is a significant adverse impact to public safety.

O2-58 cont. For residents already residing in tenuous locations, LCES is not just for firefighters. LCES (Lookouts, Communications, Escape Routes, Safety Zones) should be practiced by the public. However, even firefighters have difficulty implementing the concept. Hence, firefighter injuries and deaths continue to occur in the effort to defend poorly sited people and properties.

O2-59 Technical Memorandum Appendix D suggests: "Existing Land Uses" north of Mast Boulevard can be evacuated in 78 minutes. Partial evacuations can be accomplished in scenarios ranging from 19 minutes to 78 minutes. Full Project evacuation is estimated to take 53 - 92 minutes depending upon construction of the Magnolia Avenue escape route. A Full Project evacuation including Existing Land Uses is estimated to take 117 minutes. [plan p. 18] These estimates do not account for various degrees of readiness and mobilization by the public or lags in distribution of communications.

Without substantiating evidence, the plan labels the 19 minute scenario as the "Most Probable Evacuation." The label is misleading because the need for a full project evacuation may be just as probable as the "most probable" perimeter only evacuation scenario suggested as a 19 minute end point.

This "Most Probable" scenario should be re-designated as a "Priority Phase 1 Perimeter Evacuation" Scenario.

O2-60 However, the "Most Probable" scenario does not reflect the reality of the San Diego County Evacuation Planning Map Book Public Safety Grid Index system most likely to be utilized for evacuation directives (Orders and Warnings) when the need for evacuation is immediate or imminent. The grids cover much larger areas than the meandering perimeters desired in "Most Probable." Half of the project or more exists on a single grid. For example, the bulk of the project, both "Orchard Village" and "Vineyard Village" exist on Grid 3333 of page 224.[24]

[24] Exhibit 11. Public Safety Grid Map

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O2-59: The comment accurately states evacuation travel times from the CR Associates Technical Memorandum (Appendix D of Appendix P2, Wildland Fire Evacuation Plan) and also states the most probable scenario may not be the most probable. It is accurate that this is the travel time and that mobilization time would be additional time and would vary based on the evacuation scenario and urgency. As stated on pages 19 to 20 of the Technical Memorandum (Appendix D of Appendix P2, Wildland Fire Evacuation Plan):

> Notwithstanding evacuation challenges and variables, the success rate in the City of Santee in safely managing both mass and targeted evacuations is nearly 100% safe evacuations based on research showing there were no fire-caused deaths during an evacuation. Technological advancements and improved evacuation strategies learned from prior wildfire evacuation events have resulted in a system that is many times more capable of managing evacuations. With the technology in use today in the City, evacuations are more strategic and surgical than in the past, evacuating smaller areas at highest risk and phasing evacuation traffic so that it flows more evenly and minimizes the surges that may slow an evacuation. Mass evacuation scenarios where large populations are all directed to leave simultaneously, resulting in traffic

> delays, are thereby avoided, and those populations most at risk populations are able to safely evacuate.

Scenario 4 was considered by SFD and Dudek fire experts to be the most likely scenario because (Appendix D of Appendix P2, Wildland Fire Evacuation Plan):

> The land uses evacuating under this scenario include a portion of the Project as well as a portion of the existing land uses. Evacuating land uses were selected based on their proximity to existing open spaces area" (see Appendix D of Appendix P2, Wildland Fire Evacuation Plan, page 4 and Figure 3A and Figure 3B for a depiction of the area assumed to be evacuated under this scenario).

Irrespective of the labels assigned to the scenarios studied, none of the scenarios resulted in a significant potential impact pursuant to CEQA, for the reasons described in Recirculated Section 4.18 – Wildfire, with regard to wildfire or evacuation safety.

O2-60: This comment claims the most probable scenario does not reflect reality. The City disagrees with the opinions expressed in this comment, for which no supporting evidence is provided. The comment reflects a lack of understanding of modern evacuation procedures and technology. The comment speculates about evacuation without a foundational understanding of the process for

During a major Santa Ana wind driven event, even if an experienced Incident Commander is available, the IC is still unlikely to have time to be any more specific than to identify the Public Safety Grid numbers subject to a directive when the need for evacuation is immediate or imminent. Elaborate specific directives are unlikely to be effectively communicated.

If the IC chooses to request more specific areas for evacuation orders, what is the average amount of time it takes for the specific order to be prepared by the IC, communicated by the IC to the EOC and then translated digitally and distributed through WEA or AlertSanDiego systems to the public?

O2-60 cont.

For instance, even if contemplated, a description of the "Most Probable" perimeter evacuation would require identification of four different grids and is complicated enough that it is unlikely to be completely understood and translated for implementation. This reality means that significantly larger populations are likely to be simultaneously evacuated than the Evacuation Plan alleges (without providing substantial evidence in support). The entire grids identified are most likely to be evacuated rather than elaborate subsets of those grids. The same issue exists for all of the partial evacuation scenarios the plan relies upon.

Hence, if the plan's other data input calculations are reliable, a more realistic evacuation time is a minimum of 120 minutes (two hours) plus additional time for readiness/mobilization variations, plus time for neighborhoods adjacent to Fanita outside of Santee, plus time from when the ignition report to when a size-up with an action plan is communicated to dispatch. These additional realities could require another 60-minutes or more.

O2-61

A project evacuation time of two hour or more has a significant divergence from the FEMA guideline to be able to evacuate a community in 1.5 hours or better. [plan p. 34] **The additional time of 30 minutes or more is a significant adverse impact to public safety.**

The plan analysis suggests that a typical Santa Ana wind-driven fire with ignition 16 miles northeast of the project might leave SR-52 westbound "available for a period of time" because of the 14 hours between the reported Cedar Fire ignition and approximate arrival to SR-52. [plan p. 35]

O2-62

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evacuations utilizing the digital map-based system that is now available throughout San Diego County. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for details on evacuation procedures. Technological advances have rendered the Map Book Grid Index as a secondary resource when targeted evacuations are being implemented. There is no expectation that the map book grid page needs to be evacuated simultaneously when unnecessary, given the ability to target evacuations to the street level. The opinions expressed in the comment reflect outdated, historical evacuation management methods that have evolved to include a more sophisticated use of proven technology used throughout California, specifically to help manage evacuations so they are conducted efficiently and effectively through smaller evacuation areas in a phased approach. Regarding timing of evacuation orders, it is estimated that using the available technology, including the Wireless Emergency Alerts system, areas can be identified and alerts sent within several minutes.

O2-61: The comment offers speculation about alternative evacuation times for the project without evidence or analysis. The CR Associates Technical Memorandum (Appendix D of Appendix P2, Wildland Fire Evacuation Plan) utilized an industry reliable model (VISSIM), and a registered traffic engineer with support from a fire protection planner with over 25 years' experience, as well as input from SFD, to arrive at its evacuation travel time estimates. The comment

focuses solely on the mass evacuation scenario modeled. A mass evacuation scenario is modeled in which all area residents would evacuate at the same time. This scenario presents a worst-case as it assumes all traffic would be directed to the evacuation roadways at once. Mass evacuation events can overwhelm a roadway's capacity, which, when reaching a threshold traffic density, begins to decrease traffic flow. In an actual "real-life" wildfire event, a phased evacuation would be implemented where orders are given to evacuate based on vulnerability, location, and/or other factors, which reduce or avoid traffic surges on major roadways and improve traffic flow. The phased evacuation strategy also prioritizes the evacuation of residents in proximity to the immediate danger, giving emergency managers the ability to monitor the fire situation and decide in real-time based on changing conditions whether or not to order additional evacuations as needed. The Wildland Fire Evacuation Plan (Appendix P2) analysis includes several targeted evacuation scenarios in which those residents closest to the urban/wildland interface (both 1/8 and 1/4 mile away) would be evacuated to evaluate more realistic "real-life" scenarios compared to a mass evacuation. The evacuation times are within acceptable levels, especially considering that the mass evacuation event contemplated in the comment is an unlikely possibility and would afford emergency managers several hours to plan an evacuation before a fire were to arrive in the project's vicinity. As discussed the Wildland Fire Evacuation Plan (Appendix P2)

and Thematic Response 4 – Fire and Evacuation, specifically subsection 4b, which discusses types of evacuations and the proposed project's evacuation modeling, there are many options available besides a mass evacuation and SFD has confirmed that these alternatives are all valid options that may be used, depending on what is deemed most appropriate during an evacuation event. Emergency personnel who issue an evacuation order may take into account the time estimates for the modeled scenarios in determining when and where to issue evacuation orders. In a real evacuation scenario, emergency managers may use alternative actions/options to further expedite evacuation. Such actions may include providing additional lead time in issuing evacuation orders, providing alternative signal control at downstream intersections, utilizing additional off-site routes or directing traffic to roadways with additional capacity, implementing contraflow lanes, issuing shelter-in-place orders when determined to be safer than evacuation, or considering the possibility of a delayed evacuation where parts of the population could be directed to remain on-site until the fire burns out in the sparse fuels around the evacuation route. These options require in the field determinations of when evacuations are needed and how they are phased to maximize efficiency. Overall, safe evacuation of the project and surrounding community is possible in all modeled scenarios. Finally, the FEMA guideline referenced is not a CEQA threshold and thus inapplicable to the present analysis.

The period from fire ignition to front arrival referenced does not recognize the 2003 Cedar Fire did not ignite during Santa winds.

The Cedar Fire (reported to dispatch at 1737, October 25, 2003) spread relatively slowly for about 8 hours until early morning when Santa Ana winds over 15 mph then drove the fire rapidly toward the coast.[25] [Exhibit 17. USFS, p. 13]

O2-62 cont.

The period of time before SR-52 is impacted will be heavily dependent upon wind speed and distance. Ignitions within 16 miles of the project site fanned by 40 mph winds or greater, could impact SR-52 and the project site well under the 2 hours estimated for evacuation of the site vicinity. The plan fails to disclose or adequately consider the ramifications of ignitions relatively close to the project site. Instead, the plan largely ignores or downplays the significance of firestorm ignitions near the project rationalizing with a misplaced reliance upon TRAs or shelter-in-place contingencies. Public safety risk is significant.

O2-63

Furthermore, none of the Evacuation Scenarios consider existing populations directly adjacent to Fanita Ranch on Grids 3334 and 3234 of page 224 on Eucalyptus Hills in Lakeside.[26] What are the time impacts associated with evacuation of Eucalyptus Hills, 1/4 mile from Fanita Ranch open space?

O2-64

Plan analysis conclusion of only 6 minutes difference in evacuation time for residents by building the project are flawed (1.3 versus 1.2 hours). (p. 34)

The project would not build new ingress/egress for Santee, nor significant upgrades to Santee's currently congested boulevards. Project evacuation would add 7,042 vehicles to the currently congested road network [Appendix D p. 13].[27] How does the plan support a 6 minute difference conclusion with an addition of 3,000 homes?

[25] Exhibit 17. United States Forest Service, California Department of Forestry and Fire Protection. 2003 San Diego County Fire Siege Fire Safety Review, p. 13 https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5297020.pdf

[26] Exhibit 11. Public Safety Grid Map

[27] Fanita Ranch Fire Evacuation Analysis Technical Memorandum, Appendix D, page 13

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O2-62: This comment compares the Wildland Fire Evacuation Plan (Appendix P2) to the 2003 Cedar Fire. The comment misinterprets the CR Associates Technical Memorandum (Appendix D of Appendix P2, Wildland Fire Evacuation Plan). It selectively quotes from the Wildland Fire Evacuation Plan (Appendix P2) and ignores the remainder of the paragraph on page 35 of the Wildland Fire Evacuation Plan (Appendix P2). In full context, the Wildland Fire Evacuation Plan (Appendix P2) states that SR-52 was not utilized in the evacuation scenarios, consistent with its conservative approach, even though it is likely SR-52 may be available for a period of time in some scenarios. The conditions during the Cedar Fire's initial hours after ignition are acknowledged and the spread rate is averaged over the entire distance to the project area, as explained on page 35 of the Wildland Fire Evacuation Plan (Appendix P2). This information was provided as an example of fire spread. The Wildland Fire Evacuation Plan (Appendix P2) analysis recognizes that there are many potential wildfire scenarios, each with its own spread rate. As such, the availability of SR-52 will vary based on real-time situation awareness. If there is an ability to utilize SR-52, emergency managers will use it. If projections indicate it would not be safe, then it would not be used. Regardless, the Wildland Fire Evacuation Plan (Appendix P2) does not utilize SR-52 for evacuations in any of the models as part of its conservative approach to model usage. The comment

ignores the Wildland Fire Evacuation Plan (Appendix P2) on page 35 that clearly states that the SR-52 was not utilized for moving any traffic during any of the modeled scenarios as part of the conservative approach. Further, the Wildland Fire Evacuation Plan (Appendix P2) addresses wildfires that ignite closer to the project under Santa Ana wind conditions. Under such circumstances, not all of the project likely would be evacuated because of the several options that are available in addition to evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for details on evacuation procedures and options available at Fanita Ranch.

O2-63: This comment states the evacuation scenarios didn't consider certain adjacent existing populations. Eucalyptus Hills has no physical roadway connection to the proposed project and does not rely on the same evacuation roads as the Fanita Ranch. Downstream neighborhoods that would utilize the same evacuation roads are the focus of the evacuation modeling for the project as these are the communities that could experience higher traffic levels.

O2-64: The comment expresses the opinion that the modeled evacuation times are flawed but provides no supporting evidence or analysis. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and b, for a discussion of evacuation modeling. In addition, the comment incorrectly asserts that the project would not improve the existing Santee transportation network. In

addition to the improvements to Fanita Parkway, Cuyamaca Street and Magnolia Avenue, the project is conditioned to make extensive upgrades to the local roadway network and facilities (see Appendix D, pages 15–16, of the Wildland Fire Evacuation Plan, Appendix P2).

O2-65 The plan introduces further bias towards development by referencing approval by the County of San Diego Board of Supervisors for subdivisions with 60-120 minute evacuation timeframes. The plan fails to disclose the referenced projects were successfully challenged by either the California Attorney General, environmental organizations and/or successful referendums because of adverse impacts prioritizing fire safety.[28] [plan p. 35]

What is the current status for all of the subdivision projects referenced on page 35?

O2-66 The plan wrongly asserts without support, "additional [evacuation] time does not necessarily generate a greater safety risk." Where are the specific TRAs and what are their contingencies? Under what conditions will specific TRAs fail or be insufficient to prevent injury? Without detailed answers to these two questions a plan conclusion that available evacuation time is unnecessary is unsupported.

6.2 Phased vs. Mass Evacuation - Evolution of Wildfire Evacuation Implementation

The plan errantly suggests high risk Red Flag days will occur "fewer than 20 days per year." [plan p. 35]

O2-67 The conclusion is unsupported. Extreme weather records are now a common occurrence that will continue as long as the economy remains dependent upon burning large quantities of fossil fuels. Extreme fire behavior is increasingly correlated to human intransigence and ineffectiveness to resolve a destructive fossil fuel addition with transition to cleaner alternatives.

The plan fails to recognize that it is the rate-of-fire-spread and distance from directly aligned populations that determines the size of areas targeted for evacuation directives. Phased evacuations may or may not be an option. Recognition of facts above is what is "most realistic."

[28] Camille von Kaenel. San Diego officials said rural homes were safe from fires. They were listening to developers. June 15, 2022. Inewsource. https://inewsource.org/2022/06/15/rural-homes-fire-risk/?fbclid=IwAR2uSYjVdR0Fmx8Ofn40qd07ALRRKGonGtuwHxoAjpdYBieJgAV5CE51nXY

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O2-65: This comment is concerned with references of other projects in connection with the proposed project. The general reference in the Wildland Fire Evacuation Plan (Appendix P2) to other projects being processed in the County of San Diego is intended for background and context and does not reflect bias on the part of the City in favor of development. The City acknowledges that litigation against the approval of housing development projects in the region, large and small, is commonplace, and includes Fanita Ranch. The City also acknowledges that some County projects are the subject of ongoing litigation which may ultimately impact their approvals. Such litigation against other projects does not change the environmental analysis or conclusions reached in the Recirculated Sections.

O2-66: This comment is concerned with the proposed project's temporary refuge areas (TRAs). The Wildland Fire Evacuation Plan (Appendix P2) and Fire Protection Plan (Appendix P1) address the ability for emergency managers to choose between a variety of evacuation-related options. The fire protection system proposed supports use of designated on-site areas and many of the structures for temporary sheltering during a wildfire if considered to be the safest alternative. TRAs are specific to firefighters, who will determine where to establish TRAs either as part of a pre-fire plan or during a wildfire event. Designating TRAs is beyond the scope of a CEQA analysis. Because detailed answers to the posed questions are available within the provided

analysis. The City disagrees with the comment's disagreement with the statement that additional evacuation time does not necessarily equate to greater safety risk, and the suggestion that absent additional information on TRAs, the statement is unsupported. As explained in Appendix D of the Wildland Fire Evacuation Plan (Appendix P2), depending upon the nature of the fire risk emergency managers may utilize the evacuation time modeling results to adjust the timing and scope of evacuation orders. Refer to response to comment O2-61.

O2-67: This comment disagrees with Section 6.2 of the Wildland Fire Evacuation Plan (Appendix P2) concerning red flag days and references the 2017 Lilac Fire. The number of Red Flag Warning (RFW) days in the Wildland Fire Evacuation Plan (Appendix P2) is conservative (likely overestimated). According to University of California (UC Master Gardner Program 2022), in southern California, the average number of RFW days is "several times per year". The National Weather Service indicates 20 to 30 for the East Bay Hills in Oakland. Twenty days per year for Santee is a valid estimate that may be less or more, depending on various weather factors. The comment states an opinion without citations or references to support the opinion. Even though no support is provided, should the number of RFW days be more than 20 per year, it has no measurable effect on the project or its fire protection. The project has been built and will be maintained to withstand the worst-case fire scenarios that could occur in

the site's fire environment. More RFW days does not increase the fire severity. More RFW days do not equate proportionally to more fires. The evacuation and protection systems and approaches are not affected by more RFW days. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for details regarding evacuation approach and methods utilized by the emergency management agencies in Santee and San Diego County. Evacuations are fluid events and management approach reacts and anticipates based on real-time situation awareness and applies the best available options, which in the case of Fanita Ranch, are numerous. Law enforcement coordinates with the IC and other cooperating agencies during evacuations. Anyone who refuses to evacuate will be better protected in the Fanita Ranch project than elsewhere outside a fire hardened community. There are significant resources available in terms of human power between all cooperating agencies that would respond during a wildfire evacuation. Providing intersection control can be through human presence, signal control, portable signs, cones, or other methods, again providing options to scale measures based on available resources. The 2017 Lilac Fire was a successful implementation of the very evacuation approach that would be used at Fanita Ranch. The system was working during the height of the winds and did not rely on a break

O2-67 cont.

The plan recognizes "phased evacuation effort **will** need to be enforced by law enforcement agencies and coordinated with the OA EOC and affected jurisdictions." [plan p. 36] However, the plan fails to recognized law enforcement does not have the authority to force evacuations or prevent evacuations divergent from a target phase plan that could disrupt the directed evacuation. Nor does the plan adequately address or recognize that law enforcement may be unavailable to perform the required enforcement and coordination.

The plan fails to disclose that a lucky "break in severe winds" was a primary factor in limiting injuries during the 2017 Lilac Fire.[29] [County of San Diego] By this omission, the plan misrepresents the potential feasibility of future required evacuations.

6.2 Evacuation Modeling: Planning Uses and Limitations

O2-68

"Emergency responders **will** coordinate the safest possible evacuation based on the dynamic circumstances of the actual event, including the appropriate phasing of the evacuation, and utilization of the most appropriate ingress and egress routes for area residents and emergency responders." [plan p. 37]

Once again, the plan inappropriately and significantly overstates the capability and availability of emergency response.

6.4 Civilian and Firefighter Evacuation Contingency

O2-69

The plan admits that "no community in San Diego County has been directed to shelter in place during a wildland fire." [plan p. 38] Yet, the plan relies on TRAs and shelter-in-place for aligned firestorm ignitions within 16 mile of the project site. This reliance places people and property in significant risk of injury during a wildfire.

[29] Exhibit 24. County of San Diego. Lilac Fire After Action Report. December 2017. Executive Summary page 5. https://www.sandiegocounty.gov/dmpr/docs/LilacFireAAR.pdf

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in the winds to be effective. The process was successfully moving people out of harm's way in a phased approach from the initial stages throughout most of the day until the winds diminished. This process would have continued had the winds continued. Not mentioned in the comment is the fact that the fire was running out of fuel as it approached Oceanside, where the fuels would have been largely limited to the San Luis Rey River bed as other landscapes were developed, agriculture, or other low fire hazard land use, similar to Fanita Ranch. Therefore, the worst of the fire included successful movement of people, confirming the effectiveness of the robust evacuation management approach.

O2-68: This comment questions the capability and availability of emergency responders. Refer to responses to comments O2-52 and O2-56.

O2-69: This comment is concerned with the proposed project's reliance on TRAs and shelter in place. The Wildland Fire Evacuation Plan (Appendix P2) states that shelter in place has not been a direction to date. The reason is that there has not been a need to shelter in place a large population. Because of the high success rate of evacuations, sheltering in place has not been needed. The option is still available to some fire hardened communities in San Diego County, and may be used in the future, but the priority is typically on moving people at risk from harm's way. Fanita Ranch's

focus, as detailed in the Wildland Fire Evacuation Plan (Appendix P2), would be on targeted populations, as modeled. Project features are provided that passively protect evacuees and if evacuation is considered less safe, residents may be directed to on-site refuge areas designated by the IC and/or SFD, or to remain in their protected homes.

The comment quotes selected passages from page 38 of the Wildland Fire Evacuation Plan (Appendix P2), which reference concerted pre-planning with regard to temporary sheltering in place for civilians on site. This refers to a tactical Pre-Fire Plan that would be prepared for internal use by SFD, outside the CEQA in the event the project is approved but prior to its occupancy. The commenter itself describes tactical Pre-Fire Plans at length later in this comment letter. Refer to responses to comments O2-88 and O2-89. The Wildland Fire Evacuation Plan (Appendix P2) offers flexibility and optionality, which are key factors during an evacuation, and is not intended to dictate the future decisions of emergency responders with regard to evacuation and temporary shelter in place options. Those decisions are made by emergency managers based on real-time information. Rather, the Wildland Fire Evacuation Plan (Appendix P2) analyzes whether the proposed project complies with applicable CEQA threshold of significance with regard to wildfire and evacuation safety, among others, and is a tool to promote education and awareness

O2-69 cont.

The plan recommends "concerted pre-planning" to determine when it is safe for civilian populations to "temporary seek refuge than evacuate." [plan p. 38] Failure to complete this analysis now is a significant impact to public safety by plan deficiency.

The plan admits evacuations may be disrupted or precluded by factors that include: "Fires that prevent safe passage along planned evacuation routes; inadequate time to safely evacuate; Fire evacuations during peak traffic conditions or when large events are occurring; Blocked traffic due to accidents or fallen tree(s) or power pole(s); The need to move individuals who are unable to evacuate." [plan p. 38] Yet, the plan fails to disclose the potential consequences of the listed risk factors occurrence. What are those significant potential consequences?

6.4.1 Safety Zones

O2-70

Vineyard Village/Rock Point "will eventually be surrounded by southern mixed chaparral vegetation more than six feet in height…best described as Fuel Model 4 (FM-4). An FM-4, chaparral vegetation greater than 6-feet in height, provides the greatest rates of spread and energy release with flame length usually exceeding 100 feet." [Fanita Ranch Fire Protection Plan 2007. 1:192:15843]

The current evacuation plan significantly underestimates potential flame lengths, fire intensity and the size of safety zones required to reduce potential burn injuries.

The Fanita project's own 2007 Fire Protection Plan (prepared by actual firefighters without manipulating data inputs to get a diminished results) used the BehavePlus model to calculate flame lengths of 100 feet. I confirmed the 2007 FPP, 100 feet flame length calculation using BehavePlus 5.0 calculating a result of **102.9 feet.**

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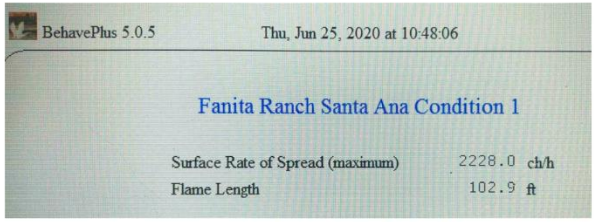
of future residents regarding wildfire risks and preparedness. It may be of use to the emergency managers in some respects, but individual project evacuation plans typically are not primarily relied upon by emergency managers.

O2-70: The comment quotes the 2007 Fire Protection Plan for the previously approved project, which utilized an overly conservative fuel model (FM-4). FM-4 is a heavy chaparral fuel model with 6 foot tall or taller fuels with 13 tons of total fuel per acre. The project site does not support this dense fuel and more recently developed fuel models better capture the site's fuels, as presented in the current Fire Protection Plan's (FPP) fire behavior analysis (Appendix P1, Section 4). Please refer to FPP Section 9 for complete discussion of the more accurate fuel model assignment in the 2022 FPP vs the 2007 FPP. The commenter confirms that by plugging in the same numbers as the 2007 FPP modeling, the same result was achieved. This does not address the issue that the current FPP uses a more refined model now available which could not have been used for the 2007 FPP. The comment's figure shows results of using the wrong fuel model to determine flame length and rate of spread. Plugging in the correct fuel model would result in flame length and rate of spread consistent with the 2022 analysis. This comment is erroneously based on an old, overly conservative fuel model that has since been replaced for the types of



O2-70 cont.

The 34 feet+ underestimation of flame length/fire intensity is significant. Another 136 feet of fuel separation is necessary. The actual safety zone requirement is 400 feet in all directions.

Furthermore, a safety zone of appropriate size for flame length size does not assure protection from convective activity, such as fire whorls that may impact the center location point.

"…potentially greater distance if there were site-specific features that would result in more aggressive fire behavior.." [plan p. 39]

Fanita Ranch has features that would result in more aggressive fire behavior. The project locates development at the top of numerous fire chimneys and chutes. [II: 101:29204-5]

O2-71

The plan suggests "some neighborhood interior roads would provide safety zones" but hedges by stating, "during a fire, the identified safety zones may not be feasible due to distance, location, fire behavior, etc." [plan p. 39] The "etc." fails to specifically disclose cluster burn risk for all neighborhoods due to the close proximity of structures relative to each other.

The plan defers its actual purpose by placing the responsibility upon fire and law enforcement agencies to identify potential safety zones with **required** focused study.

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southern California shrublands found on Fanita Ranch. Further, the comment is erroneous as it presumes that 400 feet of setback is required on the site. Safety zones are specific firefighter safety areas and there are many possible areas within Fanita Ranch that would meet this definition, even with the erroneous 400 feet number presented in the comment. The actual setbacks for structures is 100 feet, and the project increases that to 150 to 170 feet where needed so that setbacks of at least 2x the flame lengths is achieved. The provided setbacks detailed in the FPP (Section 5) and summarized in Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, has been thoroughly examined by SFD and determined to be appropriate for the type of wildfire anticipated at Fanita Ranch. Each of the areas where more aggressive fire behavior may be realized have been provided additional FMZ width to double the modeled flame lengths. Because these issues were adequately addressed in the environmental analysis, the comment raises no new issues and requires no additional response.

O2-71: This comment suggests fires on the project site would be more aggressive and that there are not adequate safety zones designated. The comment is noted regarding land features that may influence fire behavior. The FPP analyzes these landforms and addresses them through various means with the primary approach of extending the FMZs in these areas to mitigate any potential increased

"…safety zones will require additional focused study." [plan p. 39]

Focused study should have shaped the design of the project to avoid steep topography, chutes, chimneys, saddles and Fuel Model 4 vegetation. [II: 101:29204-5]

O2-71 cont.

Failure to design and designate adequate safety zones is a significant adverse impact to public safety that must be disclosed.

6.4.1 Temporary Firefighter Refuge Areas

The plan correctly discloses "TRAs are not a substitute for a safety zone." And "a TRA requires another planned tactical action, i.e., TRAs cannot be considered the final action. [plan p. 40.]

TRAs are not considered appropriate tactics for civilians because they require expertise and rely upon a series of actions that may be compromised or fail.[30] [Exhibit 2. Cal Fire. 2014. Wildland Urban Interface Operating Principles]

O2-72

Yet, without disclosing the project's significant risk of cluster burn, the plan relies upon "interior areas of neighborhoods" to be used as TRAs "For the Fanita Ranch Community."

The plan identifies residences it previously directs to be "locked" as TRAs and touts fire resistant features, including ember resistant vents and a tempered pane of dual pane windows.

Wide FMZs do not stop airborne firebrands. Ember resistant vents aligned with a storm of firebrands can be breached to points of structure ignition.

Windows can be broken by convective action that lifts objects stored outside of a residence allowing ignition.

[30] Exhibit 26. Firefighter Nation Staff. 7/17/2012. Temporary Refuge Area Considerations and Options. Firefighter Nation. https://www.firefighternation.com/fireresCue/temporary-refuge-area-considerations-and-options/#gref

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fire intensity. The FPP is purposely generic in some areas as its authors understand that it is not the purpose a CEQA-level Evacuation Plan or FPP to dictate how a fire agency and other emergency responders will manage a wildfire event. The plan provides the format and framework within which firefighters and emergency responders can best protect the community and themselves. There is no intention to hide information as suggested in the comment. The establishment of safety zones for firefighters is not within the appropriate scope for a CEQA analysis. SFD would not rely on a CEQA document for determining these locations and instead will establish them as part of their internal pre-fire planning efforts or in the initial stages of a wildfire. This is not a plan weakness or oversight; it is a designed and planned procedure. The comment misplaces discussion of Safety Zones, which have been addressed in previous responses, with siting of the project, which has been intensively studied and fire protections provided based on the potential fire hazards and overall fire risk. There is no significant adverse impact associated with safety zones, as explained herein.

O2-72: This comment suggests that the project has not adequately addressed the risk of cluster burns within the project, and that in the event a cluster burn occurs the project does not provide safe spaces within the community for civilians and/or firefighters. The City disagrees with this comment. The comment conflates different concepts, such as

firefighter temporary refuge areas (TRAs) with areas where residents could temporarily shelter in place if directed to do so. The risk of cluster burns in Fanita Ranch will be effectively managed as described in response to comments O2-27, O2-30, and O2-45.

In contrast to the comment's assertion, formal TRAs are not proposed for civilians. As explained in the Wildland Fire Evacuation Plan (Appendix P2) (Section 6.4.2), due to the ignition-resistant landscapes and hardscapes throughout the community, there may be opportunities, as a last resort, where civilians could be sheltered in the interior project areas. A TRA, as being used by the commenter, refers to a wildland setting where fuels surround firefighters and they must establish a fall back area. In a fire hardened community, most of the community presents fire sheltered areas and therefore, could be used if needed during a wildfire emergency where relocation to other areas was not considered safe or available. These areas are addressed in Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, and would only be considered as a last resort based on their fire sheltering characteristics within a large, fire hardened landscape. There are no anticipated wildfire conditions that would require firefighters to seek shelter within homes. The landscape and setbacks provided allow firefighters to move to interior streets or to the lee side of hardened buildings if necessary. If emergency personnel

should need to enter a building for firefighting purposes, they would quickly open a locked door with their available tools. Regarding the comment's statement that FMZ does not stop embers, the project is required to provide specific ember resistant vents that are baffled to capture embers. The potential for ember ignition is reduced significantly as the vents are CALFIRE tested and approved and have been shown to perform as designed to keep embers out of structures. While it is not considered impossible for a window to be broken, as the comment suggests, measures would be implemented to minimize this possibility. Specifically, windows are required to be dual pane with one tempered pane. This increases the strength of the windows significantly and resists breakage from airborne objects. If a window breaks, or is inadvertently left open, and an ember enters the structure, the automatic sprinkler system is designed to extinguish or contain an interior fire to at least enable occupants to exit the structure and move to another location. Similarly, neighboring homes would be protected from ignition by the combination of California Building Code Chapter 7A ignition-resistant materials and methods. The comment's focus on cluster burns is not supported by evidence that fully compliant ignition resistive structures result in structure-to-structure burning. Fire spread through cluster burns are associated with older structures not possessing modern fire safety code features, rather than state of the art fire protection design, amenities and construction as proposed for Fanita

Windows can be left open for ventilation by residents absent and unaware of fire ignitions or motivated to ventilate by hot weather increasing the probability of fire ignitions.

O2-72 cont.

The plan infers the project may not be able to be evacuated "during a fast moving wind driven fire that ignites off of SR-52 or SR-67" and relies upon TRAs (sometimes appropriate for firefighters - not civilian tactics) without disclosing significant risk of cluster burns or any tactical contingency to deal with cluster burns. [plan p. 41]

The plan then once agains overstates the capability of fire and law enforcement resources by promising "The decision for evacuation or temporary refuging on site **will** be made by responding law enforcement and/or fire personnel."

O2-73

Even if law enforcement is available, law enforcement officers are not trained to calculate wildland fire rate-of-spread over various fuel types and topographies in dynamic weather conditions. Nor are they trained to make a series of tactical decisions for civilian use of Temporary Refuge Areas. These tasks would be a challenge for trained veteran firefighters if they are available and not detained by concurrent fire activity elsewhere.

6.5 Social Aspects of Wildfire Evacuation

Fire: Plan consumption is largely limited to planners; Training is largely limited to professionals with redundancy and experience required for successful execution; Education is sparse; Awareness is motivated in the midst of an event.

O2-74

To reduce the probability for chaos and panic, the plan places too much weight on public exposure to RSG, understanding of RSG, and ability to execute RSG concepts.

The plan once again over promises stating "movement… will occur according to a pre-planned and practiced protocol, reducing the potential for panic." [plan p. 41]

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Ranch. In the rare possibility that a cluster fire occurs, people can be moved to alternative on-site locations within a fast time frame.

O2-73: This comment is concerned with the over reliance on fire and law enforcement personnel at the project site. The City disagrees that the environmental analysis overstates capabilities of fire and law enforcement personnel. Refer to responses to comments O2-52 and O2-56. The Wildland Fire Evacuation Plan (Appendix P2) places the decision-making on authorities who train for these events. There may be scenarios where the initial reaction to a wildfire is evacuation from the site by a portion of the Fanita Ranch population. This action would not be in conflict with the Wildland Fire Evacuation Plan (Appendix P2), but may be altered or changed once the emergency management personnel take control of the emergency. Fire spread is determined through real-time data and situational awareness made possible by the hundreds of millions of dollars invested in wildfire response resources over the last 20 years in San Diego County alone. Regarding wildfire near Fanita Ranch, responding firefighters, from the on-site station, would likely be involved in the initial size-up and breadth of the evacuation effort. This comment reiterates an earlier statement from this commenter regarding the abilities of law enforcement and fire personnel to gauge fire spread, evacuation, and use of on-site shelters that is without merit due to the resources now

available to emergency managers and the training provided to first responders. Local emergency responders have an excellent track record of successful wildfire evacuations.

O2-74: This comment questions the training and skills of emergency responders, firefighters and law enforcement. The City disagrees. The comment also questions the effectiveness of the Ready, Set, Go! Program (RSG). The comment refers to reliance on RSG and inaccurately suggests it is the core of the fire evacuation planning for the project. Please refer to responses to comments O2-35, O2-36 and O2-53 for the role RSG, ongoing outreach, and training plays in overall Fanita Ranch evacuation preparedness. Fanita Ranch's HOA would actively provide information to its residents regarding wildfire and evacuation and what residents may be asked to do during a wildfire event. The goal is to raise awareness in order to help facilitate efficient evacuations. These are requirements for the project, and compliance with the FPP and Wildland Fire Evacuation Plan (Appendix P2) are enforceable conditions of the project's approval. These will be required and enforced through compliance monitoring. Likewise, SFD will internally work on response pre-plans for Fanita Ranch to help facilitate effective evacuations and understanding of the various evacuation alternatives that are available independent of the CEQA process. Such SFD pre-planning typically is for

Who is pre-planning?

Where are examples of these pre-plans in Santee?

What are the protocols referenced?

Who is practicing the protocols referenced?

What documentation exists to demonstrate the protocols referenced have been and will be practiced in Santee?

O2-74 cont.

The plan inadvertently admits there are circumstances when evacuees will not "receive information from credible sources," despite repeated contradictory use of the word "will."

The plan does emphasize a **requirement** for annual training without establishing a mechanism commitment for such essential training.

"The importance of training these personnel cannot be understated and annual education and training regarding fire safety and evacuation events **will** be essential for successful future evacuations." [plan p. 41]

Evacuation training at fire agencies is limited, if it occurs at all, and is secondary to the primary responsibility of fire suppression. I suspect the same is true for law enforcement where the primary responsibility is law enforcement.

6.6.1 Evacuation of Special Populations

O2-75

The plan relies upon "Accessible AlertSanDiego, CERT programs, or other" to provide emergency evacuation transportation to special needs individuals anticipated as residents. [plan p. 42]

The Camp Fire (among others) where a Reverse 911 system was in place demonstrated that reaching all special needs individuals during a firestorm is not

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internal use only, and not for public consumption. Rather, emergency managers recognize that wildfire events are fluid and notify residents regarding evacuation based upon real-time information as the emergency situation occurs. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for details regarding evacuation messaging.

O2-75: This comment is concerned with the evacuation of special needs individuals. Regarding special needs assistance, the Wildland Fire Evacuation Plan (Appendix P2) utilizes the standard procedure, along with encouraging special needs residents to have their own evacuation plans and persons who can help them in the event they are within an evacuation area. Comparing the Camp Fire with Fanita Ranch is not a valid comparison due to the significant differences in resources available. A better comparison would be the 2017 Lilac Fire where, in a similar "special" relocation, over 600 horses were moved out of the area to Del Mar by owners, volunteers, and County Departments. Special needs residents can set up a layered system of assistance through publicly available organizations, private organizations/non-profits, relatives, and neighbors. Moving special needs populations out of the area is not anticipated to be a significant issue during evacuations and would not rise to the level of a significant adverse impact.

feasible. Special needs individuals are also less likely to be willing to leave without simultaneous evacuation of their pets.

O2-75 cont.

Placing special needs individuals in the Fanita Ranch severe fire hazard zone is a significant adverse impact to public safety.

7. Limitations

[My observations bracketed]. Again the plan over promises:

"The Fanita Ranch populace **will** be "Set"…officials **will** implement the plan and mandate [*without legal authority to do so*] that populations "Go"…evacuation **will** occur based upon conservative decision points…residents **will** be aware of this evacuation plan…educational outreach **would** result in a populace that understands [*without any way to measure understanding or compel educational participation*] the potential for evacuations and the routes and options that may be presented to them." [plan p. 46]

O2-76

The plan correctly lists some of its contradictions, including:

- "…instances when evacuation is not possible"
- "During extreme fire weather conditions, there are no guarantees that a given structure will not burn or that evacuations will be successful…"
- "Fire can compromise procedures through various unpredictable ways"
- "Fire is a dynamic and somewhat unpredictable occurrence, and it is important for anyone living at the wildland-urban interface to educate themselves…"

These admitted limitations and contradictions, despite project mitigation measures, are why a decision to place new residents in harm's way significantly exposes people or structures to a significant risk of loss, injury or death involving wildland fires and requires either avoidance or a statement of overriding considerations for doing so.

O2-77

The project should be denied. Placing thousands of new residents in a Cal Fire designated "Very High Fire Hazard Severity Zone" while the State is setting more records for climate exacerbated wildfires would be gross negligence.

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O2-76: This comment is critical of the Ready, Set, Go! Program. Refer to response to comments O2-35, O2-36 and O2-53. The comment provides selected quotes from the Wildland Fire Evacuation Plan (Appendix P2), suggesting that the content invalidates the analysis and findings of the Wildland Fire Evacuation Plan (Appendix P2). The City disagrees. Wildfire and weather and dynamic and unpredictable. The Wildland Fire Evacuation Plan (Appendix P2) is not intended to provide absolute certainty where it does not exist. The Wildland Fire Evacuation Plan (Appendix P2) does, however, represent a thoughtful and state of the art analysis of the issues presented by wildfire to the safe evacuation of the proposed project. As such, it satisfies the requirements of CEQA.

O2-77: The comment expresses opinion that the project should be denied, which is unrelated to the substance of the Recirculated Sections and does not raise issues regarding the adequacy or accuracy of the environmental analysis. Also, refer to Thematic Response 2 – Referendum and Measure N Applicability. No additional response is required.

O2-77 cont.

Santee residents previously defeated a 3,000-unit project by a 2/3 landslide. The effort to force another 3,000-unit project upon Santee residents despite their clear direction reeks of corruption. [Reference Van Collinsworth letters dated 9/21/2020 documenting the flow of funds from Fanita Ranch proponents to elect Santee city council members.]

O2-78

Specific evidence was provided in my prior comment letters as to why cluster burns on this project are of great concern. The specific evidence presented by my comments remain inadequately address by substantial evidence to the contrary. I carry forward my prior public safety objections to the project.

The project is based upon the false assumption that cluster burns will not occur. The site cannot be effectively evacuated so the design wagers heavily that design features will prevent cluster burns with mass fatalities. The REIR distorts reality by making "apple to orange" comparisons for Fanita with projects that survived wildfires, while failing to discuss recent subdivisions that have suffered losses. My previous comments explain in detail why those comparisons fail. I carry those comments forward.

What are the distances between structures and the flame impingement potential from structure-to-structure.

Who are the entities to be relied upon for transportation assistance? This should be answered by a project that proposes to place thousands in a severe fire hazard zone.

The project assumes without providing any evidence that law enforcement will be available during Santa Wind driven wildfires when emergency response teams are often overwhelmed by the pace and scale of multiple expanding events. The REIR does not adequately address the potential for gridlock along evacuation routes adjacent to wildland fuels capable of incinerating evacuees.

O2-79

The REIR assumes incorrectly and without any evidence that a wildfire will not transition into the urban environment with older homes highly vulnerable to embers and that high-intensity urban fires would not impact gridlocked escape

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O2-78: This comment discusses the risk of cluster burns on the project site. The risk of cluster burns in Fanita Ranch would be effectively managed as described in responses to comments O2-27, O2-30 and O2-45. There are no State or Santee Fire or Building Codes that provide a minimum structure spacing in fire hazard severity zones that would impact the project's planned spacing. There is a minimum of 10 feet between structures within the proposed project, with greater distances on sloped streets. Regarding transportation assistance, Santee will identify transportation assistance consistent with County Emergency Operations Plan (EOP), Annex Q, as implemented by the City's EOP. Regarding the availability of emergency resources in the event of a wildfire, refer to response to comment O2-52. Please also refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, for extensive response to law enforcement availability, coordinating agencies who will assist, and how evacuations are managed so that traffic needing to be moved is moved through intersection control and other methods. With respect to the assertion of gridlock along evacuation routes, refer to Appendix D of Appendix P2, Wildland Fire Evacuation Plan, regarding evacuation travel times.

O2-79: This comment is concerned with existing older residences. This comment correctly states that older homes and structures are more vulnerable to wildfire than newer

O2-79 cont. routes. The REIR completely ignores recent fire history of urban environments in California and Oregon being wiped from the map by wind driven firestorms.

O2-80 What is the total amount of wildlan-urban-interface area added by the project? How many miles of wildlland interface currently exist in Santee? What percentage increase does the project represent? How many brush engines and firefighters does Santee currently have to respond to emergencies and how many will be added?

What is the percentage change in resource availability versus wildlan-urban-interface?

O2-81 The project site has had difficulty maintaining existing fire buffers taking well into June to cut tall dead flash fuel grasses. Creating more interface increases the burden of difficulty.

A buffer 4-times flame length rule of thumb to reduce the potential for burn injuries is standard for firefighters. The principle is the same if it is a firefighter deploying a fire shelter or an individual temporarily sheltered in a vehicle. Chaparral is capable of generating flame lengths in excess of 100-feet and the gridlock the inadequate circulation system provides potentially leaves people incinerating in their vehicles.

O2-82 Fire code requires two access routes with at least 1.38 miles of separation. Cuyamaca Street and Fanita Parkway merge into a single horseshoe configuration dependent upon Mast Boulevard. The distance between the two roads is only **1.25 miles** at the exits from natural lands. Fire Code D107.2 Remoteness requires a minimum of 1.38 miles of road separation based upon a service area diagonal dimension of 2.75 miles. **The road design is not compliant and both of these routes could be heavily impacted by a firestorm simultaneously.**

O2-83 There is a lack of public safety zones within the project site. Since the project relies upon the school as a Temporary refuge Area, what is the status of potential school construction? What is the impact of losing the school site as a TRA?

O2-84 Why hasn't the highest risk topography on the northern part of the project site been avoided?

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homes, such as those proposed for Fanita Ranch, which include modern fire safety elements and code requirements. Recirculated Section 4.18 – Wildfire, analyzes wildfire risk and evacuation of the proposed project. The analysis indicates that existing, older homes and structures in nearby neighborhoods, built pursuant to older fire code requirements and without modern FMZ design, indeed are more vulnerable to wildfire. The potential for neighboring areas to be evacuated with or without the proposed project was analyzed in Appendix D of Wildland Fire Evacuation Plan (Appendix P2), including the effects of the project upon evacuation timing under multiple scenarios. However, it is the proposed project that is the focus of the environmental analysis, not the existing built environment.

O2-80: This comment inquires about the amount of WUI area, how many SFD resources are needed to respond to emergencies, and the percent change in resource availability versus WUI. There are roughly 10 miles of WUI on the northern portion of Santee. The project percentage increase is roughly 50 percent. The project provides a fire station with wildland firefighting capabilities. The FPP, Section 5, provides details regarding SFD's current response resources. Adding a new fire station increases the capabilities by roughly 25 percent. It is important to understand that by adding WUI, the project is not increasing the WUI risk proportionally

with its size since it is inclusive of the many protections detailed in Thematic Response 4 – Fire and Evacuation, specifically subsection 4d. The project is projected to require fewer resources to protect each additional mile of WUI than existing communities because of these features.

O2-81: The comment raises a concern regarding vegetation maintenance that is fully addressed within Section 6 of the FPP regarding FMZ maintenance through the HOA and inspections provided by a 3rd party specialty firm. The comment confuses firefighting in a wildland setting with that of a hardened, large, converted landscape that would not facilitate wildfire spread. For structures, the typical setback rule of thumb is twice the flame length, which is met and in many areas, exceeded throughout the project. The comment mistakenly assumes that 100 feet flame lengths would occur throughout the site. The fire behavior modeling was conducted at a fine scale and determined that the wrong fuel model was previously used and a more accurate fuel model, along with terrain and worst-case weather, would result in flame lengths of approximately 66 feet in the most extreme areas, and many areas include lower flame lengths less than 20 feet. Roadside flames south of the project may be as high as 50 feet, but when fire is burning adjacent to an evacuation route, evacuations would be temporarily halted and a contingency option offered by Fanita Ranch employed until the fire burned through the area, avoiding placing evacuees at risk.

O2-82: This comment discusses requirements of the Fire Code. Remoteness of access is at the discretion of the fire authority having jurisdiction. When a project substantially conforms and provides additional measures that increase safety, fire authorities may accept remoteness that is less than the strict code dimension. In this case, the remoteness substantially conforms with the code and the project provides numerous additional features (summarized in Thematic Response 4 – Fire and Evacuation) that make this slight deviation justified without compromising safety.

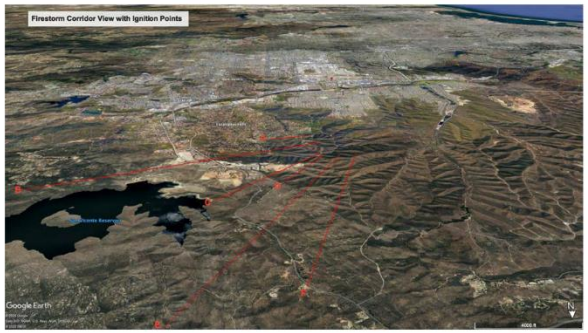
O2-83: This comment is concerned with the reliance of the proposed school site as a TRA. The school site is but one possible refuge area among several. Refer to response to comment O2-72. Whether the school is built or not, refuge areas would be available for residents and safety zones will be available for firefighters.

O2-84: This comment questions why the highest risk topography has not been avoided. The environmental analysis concludes that the risk posed by wildfire is less than significant for the project as a whole. The project area located in the northern part of the site has been adequately protected as discussed in Thematic Response 4 – Fire and Evacuation, specifically subsection 4d.

Points A- E are all plausible ignition points and plausible scenarios for Santa Ana wind driven fires, yet the EIR fails to plan for any of them or any other points of ignition. Not one single scenario is evaluated in the document for timing of evacuation or emergency response. The decision is negligent and a callous denial of the trends of growing mega-storm wildfires.

Point A is .6 miles from the project.
Point B is 3.75 miles from the project.
Point C is 1.9 miles from the project.
Point D is 1 mile from the project.
Point E is 3.75 miles from the project.
Point F is 3 miles from the project.
[1 mile = 5,280 feet]

O2-85



The 2007 FPP disclosed a potential rate of spread at **1,966.5 feet/minute**

Of the requested ignition point analysis, Points B and E are the greatest distance so the fire would impact the project site more rapidly in the other scenarios.

Points B & E = 19,800 feet / 1966.5 feet/minute = **10.06 minutes to the project site**.

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O2-85: This comment describes some possible ignition points for Santa Ana wind-driven fires on the project site that the comment claims were not evaluated. There are many more possible ignition points to the north/east of the proposed project than presented in the comment. It is not possible or required to evaluate every possible wildfire scenario. Refer to response to comment O2-47. The environmental analysis evaluates a worst-case condition wildfire scenario and a typical weather day scenario. The site is built to protect the community and provide defensibility to fire fighters based on these worst-case conditions. From an evacuation perspective, evacuation scenarios have been modeled that include large scale and more targeted evacuations of the project and the existing community. Results are within acceptable timeframes, particularly in light of the additional options that are available if evacuation efforts were to require a different objective, like temporarily sheltering on site. The comment provides calculations based on the 2007 FPP and selected ignition points. The 2007 FPP is no longer applicable and provides an invalid basis for comparison to the proposed project. Evacuation is not simply a time until fire arrival equation. The vulnerability of the community and its ability to provide protection for its residents is a key factor. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, regarding evacuation methods and scope. In a scenario where 10 minutes was

Can the project site be evacuated in 10 minutes or less? The answer to this question the EIR refuses to analyze and disclose is that it is absolutely not feasible to evacuate the project site in 10 minutes or less. Under these scenarios with structural failure leading to cluster burns there would be a mass casualty incident.

O2-85 cont.

These calculations reveal a significant adverse impact with an answer of yes to the question: *"Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires?"*

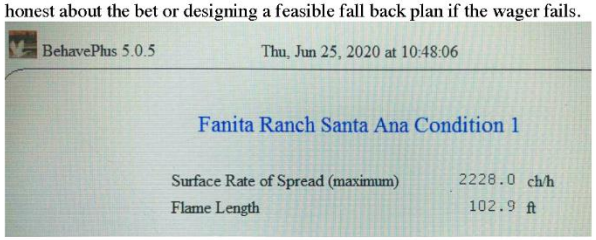
Again – the EIR does not adequately address this CEQA required significance threshold issue/question.

A Santa Ana wind driven fire igniting 17 miles downwind would impact the project site in 45 minutes.

89,760 feet / 1966.5 feet/minute = **45 minutes to the project site.**

In 2007, at hearing, a project consultant estimated at least 1 hour and 45 minutes to evacuate a 1,395-unit project site. If the calculation for the 1,395-unit project is reliable, evacuation of the project site is clearly underestimated and infeasible for a 3,000-unit project. The project wagers heavily upon shelter-in-place without being honest about the bet or designing a feasible fall back plan if the wager fails.

O2-86



A project infeasible to evacuate provides incentive for project proponent consultants to diminish former FPP flame length calculations by utilizing different inputs. I have performed a calculation yielding 102.9 ft. flame lengths using reasonable input variables.

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available before fire were to arrive, evacuations would likely not be implemented for Fanita Ranch and relocations of some perimeter residents may occur to project internal refuge areas. This may not be a possible approach in older, more vulnerable communities, but it is available in new, fire hardened communities like Fanita Ranch. The City disagrees with the opinion based on the comment's assumption that the entire project would need to be evacuated vs. the reality that only portions of the project would be moved to other on-site locations.

O2-86: The comment provides calculations for fire spread from 17 miles away from Fanita Ranch. However, this calculation does not account for variations in fuel types, terrain, or weather which will result in a non-consistent wildfire spread rate. This calculation relies on the most aggressive spread rate in fuels that do not occur consistently along the 17-mile path. In short, it is an invalid calculation not in keeping with the standards used by trained wildfire experts. The comment also ignores that the current protocol for evacuation has changed to a surgical approach versus in 2007 when a mass evacuation would be the normal approach. These differences result in significant reductions in evacuation times needed to move portions of the population vs. the entire population. The comment suggests that project consultants have altered scientific modeling to result in more favorable results. This accusation is unfounded and unsupported. Please refer to

Fire Protection Plan Section 9 (Appendix P2) for details concerning why the modeling was updated to use a more accurate fuel model. Regarding the provided model outputs and image: reproducing 2007 flame lengths using the wrong model, as was used in 2007, would be expected. The Dudek modeling was conducted by a career fire behavior analyst using the latest information with a goal of accurately portraying the site's fire environment. Questioning the credibility of the modeler and consultants is considered a misguided approach. The comment provides opinions and accusations that raise no new issues not previously analyzed and/or addressed and therefore, requires no changes to the technical reports or additional response.

The Evacuation Plan is Inadequate

O2-87 The Evacuation Plan needs to address the additional significant deficiencies.

What data addresses the deficiencies identified below?

An Evacuation Plan summary should be part of a Tactical Suppression plan summary that describes the specific area of coverage by geographic name/s, Public Safety grid map pages / grid numbers & Thomas Guide grid pages.
The tactical suppression summary cover should prepare a Risk Assessment Summary with a Risk Assessment Matrix and Critical Information chart including: Firefighter Safety, Civilian Safety, Air Safety (recognizing MCAS Miramar and Gillespie Field flight paths), Hazmat, Fuels, Topography, Clearance, Construction, Structural Spacing, Access, Water, Communications, Tac Air support.

Critical Information should include response safety including access and communication frequencies.

O2-88 Briefing Information should include fuels, expected fire behavior, topographic features, access, special hazards, specific safety zones, temporary refuge areas, limits of use for each, water supplies.

Command post, potential participants, staging areas should be identified.
Large fire weather development factors should be addressed.
WUI arrangements should be identified.
All of the items above should encapsulated on the cover page summary.

A second summary page should be developed for a Tactical Plan that includes the Evacuation Plan Summary. The EP summary should include a description of targeted populations, including critical/notable sites and communication methods. Evacuation trigger points should be identified. Temporary assembly sites and safety zones should be identified.

The larger tactical plan summary should include a primary plan, alternate plan, contingency plan, emergency plan and perimeter control plan.

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O2-87: This comment claims the Wildland Fire Evacuation Plan (Appendix P2) is inadequate. The comment expresses opinion with no substantiating evidence and therefore requires no additional response.

O2-88: The comment's opinion regarding what should be included in the Wildland Fire Evacuation Plan (Appendix P2) are actually describing the contents of a tactical Pre-Fire Plan that would be prepared by a fire agency, unrelated to CEQA analysis for an individual development project application. This is not appropriate for a CEQA analysis which focuses on environmental impacts and answering specific impact significance threshold questions. The tactical Pre-Fire Plan, which is for internal SFD use, would be prepared only if the proposed project were approved and prior to its occupancy.

Develop an assessment of population and structures at risk for the planning area that considers structural triage.

Emergency resource needs for the first six hours should be identified, including law enforcement, logistics and other organizational response.

A tactical map should be prepared that includes information from the critical information summary page.

O2-88 cont'd

Area map page summaries to clearly portray evacuation routes and other critical data should be included.

Scenario maps should be prepared that include critical ignition points, major paths, and projected arrival times with common and extreme weather variables.

Have the Tactical / Evacuation Plan Summaries described above been prepared similar to what already exists (as described above) for another location in the county? If not, will they be prepared and when?

O2-89

The project has significant adverse impacts to public safety and should be denied.

Sincerely,
/s/
Van Collinsworth
Geographer/Fire Expert/Director

O2-90

Attachments: Exhibits 1-34

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O2-89: This comment claims the proposed project has significant impacts to public safety and should be denied. The comment expresses opinion with which the City disagrees. No further response is required.

O2-90: This comment is an index of 34 attachment to the comment letter. The attachments are noted and were reviewed, requiring no additional response.

Exhibit Index

1 People deserve to know their houses are going to burn
2 CAL FIRE Wildland-Urban-Interface Safety
3 MEGA FIRES- The Case for Mitigation
4 Santee Council Removes Fanita Ranch from November Ballot
5 Fire Resistant is not Fire-proof California Homeowners Discover
6 Why do we keep building houses in places that burn down
7 Ready-Set-Go! CAL FIRE
8 Sorenson and Vogt, Results .. Using Reverse
9 Evacuation Decision Making and Behavioral Responses
10 City of Santee - Ordinance No. 570 p 3
11 Evacuation Checklist Grid Maps Plan Tactics B
12 Evacuation An Assessment of Planning and Research
13 Characteristics of structures that burned in the 2018 Camp Fire
14 Housing Arrangement...Camp Fire
15 Coastal fire burns 20 homes, forces evacuations in Laguna Niguel
16 High Density Development Damage Comparisons
17 Cedar Fire Report
18 Can We Really Understand Exponential Growth?
19 Chico State student loses mother and paradise home
20 'I want my mom back'- Survivor recounts final moments with mother
21 Woman who refused to flee is one of the dead
22 Paradise fire survivors say warnings were too little too late
23 Courts block San Diego housing projects over wildfire risks
24 Lilac Fire After Action Report
25 Insurance Companies Increasingly Drop Homes Throughout San Diego
26 Temporary Refuge Area Considerations and Options
27 Reuters Graphics California fires threaten unbuilt housing
28 National Bureau of Economic Research
29 Referendum Item 10 Statements
30 Reporter notebook/ Cal Fire San Diego…
31 California's not enforcing wildfire-prevention rules for homeowners
32 Santee DraftHousingElement 2021-2029
33 Developments in disaster-prone areas means big bucks for builders, but can leave communities at risk
34 CAL FIRE Wildland-Urban-Interface Book

O2-90 cont.

References & Links:

Anna Huntsman and Jake Steinberg. Developments in disaster-prone areas mean big bucks for builders, but can leave communities at risk. August 13, 2019. News21.
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Recirculated Sections of Final Revised Environmental Impact Report Fanita Ranch Project
https://www.cityofsanteeca.gov/services/project-environmental-review

Van K. Collinsworth

9222 Lake Canyon Road, Santee, CA 92071
Phone: 619-777-8268

Defensible Space Inspector

Wildland Fire & Natural Resource Management Experience

Fire Inspector – California Department of Forestry & Fire Protection / Cal Fire **2016-2022**

- Performed over 5,000 defensible space inspections focused on wildland-urban-interface, primarily in the Witch Creek Fire and Cedar Fire corridors. Achieved > 90% average annual compliance. Explained & distributed Ready, Set, Go! Performed public registration of AlertSanDiego. Trained firefighters for digital DSI. Updated DINS and ICS qualifications. Provided initial size-up reports of lightning fires on Mt. Palomar, Hot Springs Mtn. and other incidents. Performed traffic control. Evacuated trail/trailhead. Directed engine resources to special needs residents during Battalion 8 incidents. Made public presentations. Introduced engine crews to Electrical Vehicle TC response/fire suppression tactics.

Wildland Firefighter - Forestry Technician, USDA Forest Service **1980-1993**

- Responded to fire emergencies in the Western US including major Santa Ana wind driven. Performed in supervisory positions: Incident Commander, Assistant Operations Chief, Assistant Air Operations Chief, Fire Engine Operator, AFFO, Squad Supervisor. Performed backfire and burnout operations with drip torches and fusees. Coordinated with a heli-torch to backfire in chaparral. Participated in search & rescue operations. Completed/taught fire training courses/exercises. Planned/executed prescription burns without escapes.

Natural Resource Geographer **1994-2015**

- Shape community development and policy through analysis of and contribution to environmental documents, planning efforts and public relations. Review legal notices, hearing notices, staff reports, conditional use permits, general plans, zoning overlays, grading ordinances, fire protection plans, aerial photographs and other planning documents. Provide expert testimony on fire and natural resource issues.
- Performed site field evaluations. Identified and documented resources with high-resolution images and GPS. Created maps, spreadsheets, films and web content.
- Organized and participated in public forums. Delivered television, radio and telephone press interviews.
- Provided oversight for construction mitigation & monitoring agreements, including the application of storm water regulations; development and implementation of landscaping plans for the SR-125 Tollway. Coordinated with Caltrans, CA Regional Water Quality Control Board, County of San Diego, City of San Diego, City of Chula Visa staff, elected officials, planning group representatives and community members to resolve transportation, land use and various community environmental issues. Served as a founding member of the Policy Committee for the San Diego Fire Recovery Network. Authored "Preventing Firestorm Disaster" PIT, November 2003.

Academic Qualifications

Master of Arts, Geography/Political Science emphasis, Humboldt State University **1986**

Teaching Credential, Social Science, Humboldt State University **1983**

Bachelor of Arts, Geography, Humboldt State University **1982**

125-quarter units of Environmental Resource and Biological Sciences.

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Comment Letter O3: Endangered Habitats League, July 25, 2022

From: Dan Silver
To: Chris Jacobs
Subject: Recirculated Sections of the Final Revised EIR for Fanita Ranch
Date: Monday, July 25, 2022 9:55:54 AM

July 25, 2022

Chris Jacobs, Principal Planner
Department of Development Services
City Hall, Building 4
10601 Magnolia Avenue
Santee, California 92071
By email to: cjacobs@cityofsanteeca.gov

RE: Recirculated Sections of the Final Revised EIR for Fanita Ranch

Dear Mr. Jacobs:

O3-1 Endangered Habitats League (EHL) endorses comments submitted by the Center for Biological Diversity, California Native Plant Society, and Preserve Wild Santee. For your reference, EHL is a Southern California regional conservation group active in habitat and land use planning.

Yours truly,
Dan Silver

Dan Silver, Executive Director
Endangered Habitats League
8424 Santa Monica Blvd., Suite A 592
Los Angeles, CA 90069-4267

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dsilverla@me.com
https://ehleague.org

O3

O3-1: This comment endorses comments submitted by Center for Biological Diversity, California Native Plant Society, and Preserve Wild Santee and explains the Endangered Habitat League. Please refer to comment letters O2, Preserve Wild Santee, and O4, California Native Plant Society. The Center for Biological Diversity did not submit a comment letter during the public review period. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter O4: California Native Plant Society, July 25, 2022

O4

California Native Plant Society

San Diego Chapter of the California Native Plant Society
P O Box 121390
San Diego CA 92112-1390
conservation@cnpssd.org | www.cnpssd.org

July 25, 2022

Chris Jacobs, Principal Planner
Department of Development Services
City Hall, Building 4
10601 Magnolia Avenue
Santee, California 92071
Telephone: (619) 258-4100, extension 182
By email to: cjacobs@cityofsanteeca.gov

RE: Recirculated Sections of the Final Revised EIR for Fanita Ranch

Dear Mr. Jacobs,

Thank you for the opportunity to comment on the draft of the Final Revised EIR ("FREIR") for Fanita Ranch ("Project"). CNPS promotes sound plant science as the backbone of effective natural areas protection. We work closely with decision-makers, scientists, and local planners to advocate for well informed and environmentally friendly policies, regulations, and land management practices. Our focus is on California's native plants, the vegetation they form, and climate change as it affects both.

O4-1

This letter is divided into two sections. The first is the CNPS response to the analysis and mitigation of fire threats, both of which are lacking and which need to incorporate information and analysis that was available when the FREIR was written.

The second section is new information on the sensitive Crotch's Bumblebee (*Bombus c... i*), which, due to a recent appeals court ruling, is a candidate for listing under the California Endangered Species Act. It is documented to occur on Mission Trails and on Miramar within three miles of the Project site, but it was never surveyed for, although suitable habitat and food plants exist on site. Since CNPS does not officially advocate for insects, this comment is made by the writer of this letter (Frank Landis) as a member of the public.

Fire Impacts and Incomplete Analysis

O4-2

One basic fire impact question is whether the project would "expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?" Per the FREIR (p. 4.18-35) "The wildland fire risk and features prescribed in the FPP (Appendix P1) have been analyzed and developed to reduce risk to acceptable levels at Fanita Ranch by applying comprehensive guidelines developed by a technical panel of 17 professional fire prevention officers and fire protection specialists and planners" and (p. 4.18-37) "The project's redundant fire protection features, quick emergency response, evacuation routes and plans, and the contingency option of sheltering on site in protected spaces would ensure that people and

Dedicated to the preservation of California native flora

O4-1: This comment is an introduction to comments that follow. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

O4-2: The comment states that the conclusion that the proposed project would not result in a significant impact regarding exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires is "misleading." The comment suggests that, if there is no risk, an evacuation plan would be unnecessary.

The Wildland Fire Evacuation Plan (Appendix P2) is provided because it is considered necessary based on wildland fire risk to the proposed project's structures. The proposed project structures would be developed to be fire-resistant. As a conservative approach, the proposed project includes a system of fire protection that is both layered and redundant and that significantly protects and reduces structure ignition risk for the proposed project and prevents fire spread. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d, and Section 3.1 of the Fire Protection Plan (Appendix P1)

for details on how the proposed project is designed and incorporates proven fire protection and safety features to reduce the fire risk to the proposed project structures.

Notwithstanding the myriad fire protection features that would be incorporated into the proposed project, the Wildland Fire Evacuation Plan (Appendix P2) provides background information and potentially valuable timeframe information that may be used by the Santee Fire Department or other emergency managers during an evacuation event. Because evacuations or relocations of on-site populations may be considered an appropriate approach in response to the unique wildfire conditions presented depending on the wildfire scenario, the Wildland Fire Evacuation Plan (Appendix P2) provides basic information to raise the population's awareness and readiness while also addressing the court's expressed deficiency in the Final Revised EIR. Evacuation and temporary refuge or shelter-in-place provide different "plays" available in first responders' "playbook" to ensure the safety of area residents.

To the extent the commenter suggests areas mapped as "very high fire hazard severity zones" are "dangerous" and cannot be developed, the comment misconstrues state fire mapping. The fire hazard severity zones were established to identify areas where wildfire may occur—not for the purposes of prohibiting development in these areas, but to ensure that development in these areas is built to an

structures would not be exposed to a significant risk of loss, injury or death involving wildland fires."

This is misleading. If there is no risk to significant risk to structures, why the elaborate evacuation plan? The analysis tries to have it both ways: that people will be efficiently evacuated, so they're safe. and even if they can't be evacuated, they'll be perfectly safe in their homes, because their homes will not burn. Will any firefighter or consultant actually stand up and promise this? Of course not. **The Project is proposed for a dangerous site that is mapped as "very high fire hazard" because it has burned multiple times. That danger needs to be understood, the risk needs to be quantified, and the people and legal entities who are impacted by a fire on the Project site need to have a real voice in the deciding whether the Project is approved, and with what binding conditions.**

O4-2 cont.

In the FREIR, the risk was incorrectly analyzed. The Project site faces two types of wildfires, not one. While mitigation measures to both types of fires were discussed, the analysis mixes and confuses them, making the incorrect conclusion that the risks for both types were adequately mitigated, when in fact only the risks of the lesser wildfire type was. Below we will start to disentangle the mess.

O4-3

The FREIR risk analysis is also incomplete, in that it did not include financial impacts of fire. These appear to be substantial, over nine times the City of Santee's current annual budget.

A variety of people and legal entities will be impacted by a fire on the Project site, not just the residents. Their input and concurrence is needed to help mitigate these impacts. It is unclear whether all of them were identified in the FREIR and notified of their potential vulnerability, so that they could comment on the process. These concerns are detailed below.

O4-4

Two Types of Fires and Mitigating For Each

As background, not all fires are equal. Every year, California experiences many tiny fires and a few extreme monsters, a "fire ants and Godzilla" distribution. Between 2008 and 2021, California dealt with between 4,923 and 9,917 fires every year. Of these fires, only between 17 and 95 grew to burn more than 1,000 acres. This is illustrated in Wikipedia's list of fires that were over 1,000 acres, called "Big Fires" in Table 1 on the next page.

As noted, there were only 17 to 95 "Big Fires" every year, or less than 2% of the total number of fires. Unfortunately, these 1,000 acre-plus fires burned between 75 and 99% of the total acres burned every year.

Worse, the biggest 2 to 8 fires each year (The "Godzillas") burned over 50% of the total acreage burned in California that year. These monsters are inevitably wind-driven catastrophes that burn for days to months, whose total energy release (around 10^{17} joules) is on the same scale as the winds in a medium-sized hurricane. There's a scaling problem with assuming that humans can stop this kind of energy release, even if they're trained wildland firefighters.

O4-5

This is why the metaphor of "fire ants and Godzilla" is apt. If all of the fires California firefighters deal with every year are tiny "fire ants," the firefighting strategic equivalent of applying insecticide (building fire breaks, putting out small fires) is the best answer, and California's firefighters are extremely good at this. At least 98% of all fires in any given year are kept to under two square miles (1,280 acres).

The problem is that "fire ant" measures don't work on big wind-driven fires, the Godzillas, where embers can fly for miles past fire breaks to ignite spot fires. Techniques that are effective in extinguishing small fires are ineffective in dealing with wind-blown wildfires. In a majority of cases, weather changes eventually halt the biggest fires.

ignition-resistant level that has been shown to result in safe projects. Similar to requiring structures in potentially seismically active areas to build to a higher level of seismic resistance, Chapter 7A of the California Building Code requires homes in the very high fire hazard severity zone to use construction materials and methods that are appropriate for the potential wildfires that may occur in the area. Further, development of the project site would reduce its wildfire potential compared to its existing condition by converting unmaintained vegetation to a fire-hardened community with ignition resistant buildings, hardscape, irrigated landscaping, and extensive fuel modification zones.

O4-3: The comment provides a conclusory opinion unsubstantiated by evidence that the risk was incorrectly analyzed, which does not raise an issue related to the adequacy of any specific section or analysis of the Recirculated Sections. The City further acknowledges the comment as an introduction to comments that follow. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required.

O4-4: This comment suggests that the Recirculated Sections are inadequate for failing to include a financial analysis of fire impacts and posits that "input and concurrence" from a "variety of people and legal entities" is required. The City acknowledges the comment and notes that it raises

economic, social, or political issues that do not appear to relate to any physical effect on the environment. There is no requirement under the California Environmental Quality Act (CEQA) to evaluate such economic or financial effects. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Regarding public and other input, the City complied with all required public notice requirements pursuant to CEQA in connection with the Recirculated Sections and has received robust public comments from individuals, organizations, and public agencies. Refer also to Section 0.1, Preface, for additional information concerning the history of environmental review and availability of the Recirculated Sections.

O4-5: The comment states that California experiences "many tiny fires and a few extreme monsters" and that "two sets of necessary fire mitigation measures" are needed to address such fires. The comment also contends the proposed project does not allow "shelter in place."

The comment correctly states that there are small (typical) weather wildfires and large (extreme) weather wildfires and that extreme weather wildfires account for the majority of the acreage burned and structures lost. The comment is

inaccurate in the assertion that the City has not planned and provided for both types of fires in connection with the proposed project. Typical day fires occur under weather conditions where fire spread is manageable, and these fires would not create issues for the wide fuel management zone (FMZ) areas or for the ember-resistant structures at Fanita Ranch. Firefighters control these types of fires quickly and they are usually held to under 10 acres in size. Project fire resistant features would more than adequately reduce wildfire risk related to typical day fires. Refer to Section 3.1 of the Fire Protection Plan (Appendix P1).

The Fire Protection Plan (Appendix P1) also evaluated extreme fire weather wildfires in its modeling and review of historic wildfires. An extreme wildfire spreads more rapidly and produces more embers and longer flame lengths than a typical fire. All of these characteristics were evaluated within the Fire Protection Plan (Appendix P1). Regardless of the size of the wildfire, it is the fuels, terrain, and weather at and immediately adjacent to the proposed project that will have the most direct impact on the proposed project's future population and structures. Large wildfires that are very distant to the proposed project are inconsequential in many ways because they are not producing wildfire conditions at the proposed project. Until they arrive in the project vicinity, they do not threaten the proposed project other than by ember cast, which has been accounted for and addressed. It is when a

fire is burning near a community that the community's fire protection systems must be robust and capable of protection. Again, the Fire Protection Plan (Appendix P1) analyzed these issues.

Based on the extreme fire behavior analysis results, additional measures were determined to be appropriate. In addition to the myriad of fire protection measures required by the Building Code and otherwise incorporated into the proposed project, (1) the FMZs were widened, where needed, and (2) ember-resistant vents with baffles were included as part of the proposed project. Refer to Section 3.1 of the Fire Protection Plan (Appendix P1) and Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d. With these and the varied measures required to be implemented and maintained at the site, the proposed project is considered fire safe and capable of providing on-site refuge/sheltering to its residents and allowing evacuation managers contingency options rather than an "evacuation only" scenario (Fire Protection Plan [Appendix P1]). As the Fire Protection Plan (Appendix P1) explains in Section 3.1.6, this is a great benefit to both existing area residents and those who will populate Fanita Ranch:

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Table 1. Summary fire data from 2008 to 2021, per Wikipedia, as scraped from Cal Fire official documents. Total acres burned per year and number of fires/year are self explanatory. Wikipedia broke out fires >1000 acres, which here are labeled "Big Fires." Invariably, only a few big fires (2-8) accounted for over 50% of the total acres burned that year in each state. The Big Fires accounted for 75-99% of all acres burned, even though they are always less than 2 percent of the number of fires in the state.

Year	Total Acres Burned/Yr	#Fires/Yr	Number of "Big Fires" (>1,000 Acres)	Number of Big Fires that burned >50% of total acres/yr	Percent of Total Acreage Burned by Big Fires
2008	1,593,690	4,923	95	8	92.36%
2009	422,147	9,159	38	2	96.49%
2010	109,529	6,554	17	6	63.68%
2011	168,545	7,989	24	4	87.70%
2012	869,599	7,950	43	4	82.34%
2013	601,625	9,907	28	3	87.86%
2014	625,540	7,865	37	4	84.13%
2015	893,362	8,745	23	5	77.61%
2016	669,534	7,349	33	6	75.37%
2017	1,381,405	9,133	61	7	92.97%
2018	1,893,913	8,527	58	5	83.17%
2019	259,823	7,860	36	2	99.40%
2020	4,397,809	9,917	74	5	94.70%
2021	2,569,009	8,527	39	3	97.00%

Thus there are two sets of necessary fire mitigation measures. For small-scale fires, having defensible space around structures, building fire breaks, clearing annual weeds away from road edges and houses, and directly fighting fires work quite well.

For big fires, the major tactics are evacuating people out of harm's way, and using fire-resistant landscaping and building techniques to minimize ignition from flying embers. As a desperation defense or in purpose-designed systems, sheltering in place can work. Unfortunately, none of these are foolproof, especially sheltering in place in a building built to code.

Building to code helps reduce the chance of a building burning down, but it is not intended to make buildings fireproof. Chapter 7A of the California Building Code states that "[t]he purpose of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses."

Chapter 7A *does not warranty* that a building built to code is fireproof or even suitable for shelter in place. While we agree that sheltering in a new home might be somewhat safer than

O4-5 cont.

If all communities focused on shelter in place capability, similar to Stevenson Ranch and Fanita Ranch, most or all fire resources could focus on fire control instead of structure defense (Foote 2004). Thus, not only could residents shelter-in-place safely while fire burns around the community, fire resources could be directed toward better controlling and fighting the fire as the community acts as a "fire break." Further, first responders could utilize resources to focus their efforts on defense of less fire-resistant communities. Nasiatke (2003) points out another advantage to sheltering in place in an appropriately protected community, namely, a substantial reduction in the number of evacuees that would need to be managed….

Thus, the proposed project has evaluated both types of fires cited by the comment and adopted redundant ignition resistance, fuel modification, fire protection, evacuation, and other features to protect people and structures on and off site from a significant risk related to wildland fires.

Page 4 of 7

O4-5 cont.

getting stuck in a car as in the tragic Paradise fire, it is a far cry from designed for true shelter in place. **Why was it labeled as such?**

In summary, the Project's fire protection plan has to protect against two kinds of fires, and it does have some mitigation features to protect against both. Furthermore, we agree that small fires, a category which includes the majority of the fires that have occurred on the site, are unlikely to cause damage to humans or buildings. **Resistance to small fires is necessary, not sufficient, to reduce fire risk on the site, because the majority of the risk comes from Big Fires and especially from Godzilla-scale fires like the Cedar or Witch fires of years past.**

O4-6

We disagree that the measures taken are sufficient to protect humans and property from harm by large, wind-driven fires. Since two of these monsters have burned the site, any project built on it is vulnerable. As the data from California show, almost all losses of buildings and lives happen in the big fires. The FREIR recognizes this in its evacuation plan, but it mistakenly asserts that the measures it proposes will reduce the risk during extreme, wind-driven fires, to "below significance." This is a mistake, because there are no quantitative measures of safety provided, only assertions by people who have worn uniforms. **What substantial, quantitative evidence exists to demonstrate what the threshold for non-significant fire impacts to people and structures is? What evidence and analysis demonstrates that the Project's measures lower risks from big fires below this threshold?**

What Working Shelter-In-Place Looks Like

The Project proposes that buildings built to code can be used for safe shelter in place. The code makes no such assertion. To illustrate the difference between "built to code" and "safe for shelter in place," we need an example.

The best-known local example of a true shelter-in-place system for three thousand people is Pepperdine University,[1] which has deployed their continually-updated system successfully in a number of big fires. The differences between their current version and the Proposed Project are instructive, because they demonstrate why shelter-in-place on the Project site is a last resort in a growing disaster.

O4-7

Pepperdine's sits at the mouth of fire-prone Malibu Canyon. Even when the campus was designed in the 1970s, the site was known to burn, and in fact it did burn while the buildings were under construction. Pepperdine's problem is that many of its students don't have cars, so they can't easily evacuate down Pacific Coast Highway, even if the normal evacuation gridlock would let them leave. Because of its large and vulnerable population, the campus was designed to be fire resistant with its distinctive "Modernist Mediterranean" style, and the huge lawn surrounding it is supposed to be a fire defense. Nevertheless, the real defense is that everyone on campus shelters in the library and administration during big fires, while ten fire engines from the nearby Malibu Fire Department stand guard around those buildings. Campus staff stock emergency supplies in the shelter buildings and regularly conduct full fire drills for everyone. The backbone of the system are the staff, not the residents, and the staff work regularly to update their safety program in concert with the City of Malibu.

This is the only large-scale shelter-in-place system we know of in Southern California. **What additional planning, staffing, resources, and structures, and coordination with the City of Santee and firefighting agencies would the Project have to add to provide safety comparable to what Pepperdine has demonstrated? This is what is needed for shelter in place.**

[1] https://la.curbed.com/2018/11/20/18097889/wildfire-pepperdine-malibu-shelter-in-place

O4-6: The comment states the commenters' opinion disagreeing that the measures taken are sufficient to protect humans and property from harm by large, wind-driven fires. The commenter requests substantial, quantitative evidence that wildfire risk will be less than significant. Please refer to response to comment O4-5 regarding large and small wildfires. A substantial, quantitative analysis supporting the determination that wildfire impacts related to the proposed project would be less than significant is detailed in the Fire Protection Plan (Appendix P1). In that analysis, fire behavior is modeled and calculated under normal and extreme wildfire conditions, and appropriate features and measures incorporated into the proposed project are described to adequately address those known and reasonably foreseeable conditions and hazards. In addition, emergency evacuation timing has been modeled under several scenarios in Appendix D of the Wildland Fire Evacuation Plan (Appendix P2), and the availability to safely undertake evacuations is described therein. There are no adopted numerical thresholds for determining whether a wildfire risk is appropriate, and quantitative thresholds are not required under CEQA. However, when wildfire-related hazards are addressed, the wildfire risk is reduced proportionately, in this case to levels below significance.

O4-7: The comment focuses on Pepperdine University in coastal Los Angeles County, which is one example of a shelter-in-place approach and asks what additional features or

staffing/planning the proposed project would need to provide comparable safety. While Pepperdine University is one example of a shelter-in-place approach, it is not the only or best example or comparison to the proposed project. Four communities in Rancho Santa Fe were built to shelter-in-place standards and given the official standing of "shelter in place": Cielo, The Crosby, 4S Ranch, and The Lakes. These Rancho Santa Fe communities occur in similar fire environments to the proposed project and include the very same features included in the proposed project. Refer to Section 3.1 of the Fire Protection Plan (Appendix P1). In addition, the proposed project incorporates ongoing inspections and maintenance, which are key to ensuring that the protections function as intended. Fanita Ranch has been modeled after Rancho Santa Fe's shelter-in-place communities, and it is anticipated that evacuation will be managed similarly. That is, while the community was built to a specific standard designed to withstand wildfires, it will likely still be evacuated—either fully evacuated, subject to a partial evacuation, or subject to relocation orders on site—if a wildfire is threatening. Evacuating early, when time allows, is the safest scenario for residents and emergency personnel. Only if evacuation is less safe would residents be advised to remain in their homes or at one of the designated on-site refuge areas. This contingency model is superior to a community that must evacuate with no safety net option, or one that relies

entirely on shelter-in-place. No additional resources are needed to implement this approach, and first responders will organize and conduct real-time evacuation and emergency response in a wildfire event. The proposed project's Wildland Fire Evacuation Plan (Appendix P2) informs residents of emergency services, access to emergency alerts and evacuation information, and actions that can be taken to promote resident and community readiness in the event of an emergency. The Wildland Fire Evacuation Plan will be available on the community's homeowners association website and provided to each homeowner a change of property ownership.

Page 5 of 7

Financial Impacts of Fire on the Project Site

The *financial costs* implicit in "acceptable levels of risk" were not analyzed. **Why not?**

Here is an estimate of such costs. It is based on working paper 29621 published in December 2021, by two researchers from the National Bureau of Economic Research, Patrick Baylis and Judson Boomhower.[2] Their work is not focused on Fanita Ranch, but rather on the benefits and costs of California's building code with respect to wildfire losses. California's 2007 building code is the strictest in the nation. They wanted to determine whether it actually reduced the number of homes lost to wildfires, what the costs for rebuilding a burned home in California are, whether it is cost-effective to build to the 2007 code, and cost-effective to retrofit other homes to meet modern standards. In doing this work, they compiled a detailed database of over 46,000 single-family homes in California that were damaged or destroyed by wildfires. Their analysis is useful in this case because it is impartial with respect to the FREIR, and importantly because it puts quantitative estimates on the Project's fire risk, something largely missing from the FREIR.

Briefly, what Baylis and Boomhower discovered was that about 35% of California homes built before 1989 burned when hit by a wildfire, while homes built after 2007 burned about 20% of the time. Thus they conclude that the current building code does reduce fire risk substantially. By their estimate, if a single-family home burns in California, it costs around $150,000 to haul away debris and clean up the site, $61,696 for the displaced family to rent a dwelling for two years while their home is rebuilt, and $766,725 to rebuild the home, for a total cost per home burned of $978,421.

O4-8

How much would a wildfire hitting the proposed Fanita Ranch project cost? If we assume that 2,514 single-family homes would be built on Fanita Ranch and that 20 percent of these homes burn, we estimate that 503 homes will burn every time a major wildfire burns the Project. It would cost an estimated $75,450,000 to haul away the remnants of those homes and clean the site, an estimated $31, 033,088 to house the 503 displaced families while their homes are being rebuilt, and an estimated $385,662,675 to rebuild the 503 single-family homes, for a total estimated cost of $492,145,763 per large fire.

Note that $492,145,763 is a gross underestimate of the Project's total "acceptable risk." It includes losses only to single-family homes, not to townhomes, condominiums, businesses, or other structures. It makes the optimistic assumption that the cost model is accurate for Santee, although San Diego County has one of the most expensive housing markets in the nation. It also does not account for the impacted rental market, long permitting times, possible litigation delays, or inflation. Among other things.

Why is this at such sharp odds from the FREIR's conclusion? As noted in the previous section, the FREIR analysis is largely qualitative. It is predicated on the notion that the site has to prepare only for generic wildfires when the evidence strongly suggests that little fires and wind-driven infernos are radically different and require radically different strategies. Small fires can be fought, but in wind-driven infernos, evacuation and structure design are what cause the 20% losses.

While we present quantitative evidence that 20 percent of built-to-code homes are lost in wildfires, this shouldn't have been news, because similar losses were reported in the Paradise, Woolsey, and other fires years ago. **Why did the FREIR not contain an analysis of the**

[2] Baylis, PW and J Boomhower. 2021. Mandated vs. Voluntary Adaptation to Natural Disasters: The Case of U.S. Wildfires. http://www.nber.org/papers/w29621

O4-8: The comment asks why the financial costs of fire were not analyzed and discusses the estimated costs of wildfire losses. The comment also asks about project notifications and suggests that the proposed project needs to go to a vote of the people. Please refer to response to comment O4-4, which explains that CEQA does not require the analysis of economic, social, or political issues and addresses public notice. In addition, please see Thematic Response 2 – Referendum and Measure N Applicability. All interested parties were properly notified of the proposed project per the requirements of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required because the comment does not raise an environmental issue.

The comment also references the adequacy of development consistent with the building code to "fireproof homes." The proposed project is required to comply with the 2019 California Building Code and Santee's adopted version of that code, which is even more restrictive. These codes are more advanced and targeted at protecting homes in fire hazard severity zones from wildfire impacts than the 2007 California Building Code, which the comment uses for its comparison. Comparisons using 2007 codes are only partially applicable and are largely obsolete. Please refer to response to comment O4-5 regarding typical weather (small) versus extreme

limitations of the building code? It is the best in the US, but it does not make for fireproof homes.

In this section, we point out that the CEQA question--would the project "expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?"—**does not specify that the people impacted are only the site residents. Someone has to pay for the damage, and they are impacted by this project. The impacts from even 20% of Fanita Ranch burning dwarf the City of Santee's annual budget.**

Who is impacted by Project wildfire losses?

- Residents
- The owners of homes and buildings
- Workers in the businesses and other employees and contractors
- Companies insuring homes, buildings, and businesses
- The City of Santee, for lost property taxes, damage and cleanup expenses, firefighting, etc.
- Those who plan to minimize the amount of organic debris going into landfills (County and State)
- The area rental market (for displaced Project residents)
- Stormwater facilities downstream
- State of California, who will likely be asked to make good on uninsured losses. The California Attorney General's office has intervened in multiple fire-related CEQA cases. Were they notified?
- Federal government, who will also likely be asked to make good on uninsured losses.

O4-8 cont.

Were the proper representatives of all of these groups notified that this Project could impact them or their interests? Which ones were left out? What is the plan to notify the ones left out? Will comments be reopened?

The widespread and unmitigated financial impacts of this Project strongly suggest that the Project needs to go before the voters. Will it? If the Santee City Council decides that a half-billion dollar financial risk is insignificant, perhaps it is worth asking the voters if they agree?

In sum, the impacts to wildfire have not been mitigated below the level of significance by the FREIR. More work needs to be done before this document is complete. If quantitative estimates of the impacts cannot be estimated, and if the Projects impacts cannot be lowered below the level of significance, given the enormous financial risks the Project holds, it is probably more prudent to avoid the risks entirely by not building it.

NEW INFORMATION: Crotch's bumblebee (*Bombus crotchii*)

O4-9

The following section is attached with permission of CNPS by Frank Landis, who is writing as a member of the public in this section, not representing CNPS. This happens when a review of a document turns up an omission that other groups are not advocating for. CNPS does not advocate for insects, although pollinators are critically important to the continued survival of native plants.

The issue here is Crotch's Bumblebee (*Bombus crotchii*). This rare bumblebee is currently a candidate for listing under the California Endangered Species Act, and as such, it is entitled to the protection it would receive as if it were listed, until CDFW makes a final determination of its status.

weather (larger) wildfires and how they are properly analyzed in the Recirculated Sections. The proposed project's layered and redundant fire protection system, detailed in Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, and the proposed project's Fire Protection Plan (Appendix P1), are based on stringent requirements that are the result of extensive after-fire assessments, State Fire Marshal's Office testing, and eventual inclusion in the latest version of the California Building Code, specifically because they were found to perform exceptionally well to save homes from wildfire threats. When combined with wide FMZs, an on-site fire station, FMZ for neighboring properties, and many other fire protection features on a project site like Fanita Ranch, the wildfire and evacuation experts that have evaluated the proposed project have concluded with high confidence that the proposed project is anticipated to perform consistent with similar communities that have survived wildfire with no or very little damage (see Fire Protection Plan, Section 3.1 [and specifically, Section 3.1.1, which provides a comparison to similar communities]).

O4-9: This comment states that Crotch's bumble bee is currently a candidate for listing under the California Endangered Species Act (CESA) after the appellate court overturned a ruling on May 31, 2022, and therefore is entitled to protections as if it were listed until the California Department of Fish and Wildlife (CDFW) makes a final determination.

The comment states that there have been five collections of Crotch's bumble bee at locations within 3 miles of the project site and that the project site contains food plants and appropriate vegetation communities for this species. The comment requests that focused surveys for Crotch's bumble bee be conducted on the project site and states that, if found present, impacts would need to be mitigated.

The comment references the Third District Court of Appeal decision in Almond Alliance of California v. Fish and Game Commission (Almond Alliance) (May 31, 2022), the finality of which is uncertain. In Almond Alliance, the Third District Court of Appeal held that the term "fish" in CESA is a term of art that authorized the California Fish and Game Commission to list invertebrates, including Crotch's bumble bee, as endangered or threatened species (Id. at *25–26). Petitioners in Almond Alliance petitioned the California Supreme Court for review of the Court of Appeal decision on July 11, 2022. That review is still pending and may result in the decision being de-published or overturned.

There has been no change in the status of Crotch's bumble bee, and the species currently remains unlisted at this time. Further, subsequent action is needed by the California Fish and Game Commission before the Crotch's bumble bee is listed as a CESA candidate species. It therefore does not currently qualify for the same interim protections as a listed species. Specifically, in the event the California Fish

and Game Commission determines to pursue listing the bee, the administrative process requires that CDFW resubmit its petition report to the California Fish and Game Commission for its findings on whether the petition action may be warranted. Typically, the CDFW's report is made public for 30 days prior to the Commission hearing. Since the California Fish and Game Commission has already deemed that candidacy is warranted, it is possible that the Commission may simply affirm this and advance to the candidate species designation; however, this is a unique situation, and it is unclear how the CDFW will determine to proceed. After candidacy, the CDFW must prepare and submit a status review report. The report is submitted to the California Fish and Game Commission, which then holds a hearing and comes to a final decision on listing. The entire process can take about 1.5 year.

In any event, the Final Revised EIR evaluated proposed project impacts related to Crotch's bumble bee and its habitat. Final Revised EIR response to comment O6-65 provided the following:

This comment states that impacts to the Crotch bumble bee were not considered in the EIR, but due to clear evidence of the species' occurrence in the project area, impacts to this species and its habitat must be evaluated and mitigated. The City disagrees that the species was not considered. It is evaluated in Appendix N (Special-Status Wildlife Species Potential to Occur within the Project

Area) of Appendix D (Biological Resources Technical Report) of the EIR. There, based on the opinion of the biological experts preparing the analysis, it was determined to have low potential to occur based on a lack of suitable habitat on site. While generically it is described as inhabiting grasslands and scrub habitat, the listing petition (Xerces Society et al 2018; pages 37 and 38) emphasizes the species' association with prairies, less disturbed grasslands and wildflower fields, and on page 32 says that it inhabits "open grassland and scrub habitats"—inferring that the scrub habitat is open as well. Since the comment continues by saying that the species was historically common in the Central Valley, it is assumed that the once rich wildflower grasslands and open salt scrub habitats is what it is referring to. Based on the opinion of the biological experts preparing the Biological Resources Technical Report (Appendix D), the City disagrees that the species has been found on the project site, much less the project footprint as the commenter states. A review of CNDDB data for this little-known species shows two historical locations: 2010, approximately 2.5 miles northwest, and 1981, approximately 4 miles to the southwest. Based on a review of CNDDB records, there are locations from the Borrego Springs area in the desert (1952), as far south as Otay Mesa (1998), as far east as Corn Spring in the desert Chuckwalla Mountains (1993), on Santa Rosa and Santa Cruz islands (1941, 1990s), and as far north as Red Bluff

(1956). This is a difficult species to identify and the workers and males can have different coloration patterns from the queens and there are gradients within each (Williams et al. 2014; Koch et al. 2012) potentially making them difficult to differentiate from other species. There are a number of other species with roughly similar coloration patterning. Based on the fact that the habitats present on the project site do not resemble those described in the petition, the erroneous assertion that they have been found on site, and the lack of knowledge about the species (e.g., habitat usages, population status, basic biological requirements; lack of survey protocol), in the opinion of the biological experts who prepared the analysis, the low potential assessment and thus would not require additional surveys or analysis. CEQA requires that a project is analyzed using the best available information. Further, it should be noted that CDFW, the lead agency reviewing the petition, did not raise this as an issue in their comment letter. Finally, the legality of listing the bees is currently in litigation, with a decision expected in December 2020. Briefly, the question is whether bees can be called "fish" and therefore listed as an invertebrate because insects are not specifically cited as eligible for listing. Aquatic invertebrates were considered under the "fish" category previously, but now the petitioners are arguing that any invertebrate can be categorized as a fish.

Final Revised EIR responses to comments S4-8 and S4-9 further described the timing of the proposed listing as a CESA candidate species after issuance of the Notice of Preparation and emphasized that there is no standardized survey method currently available. The responses concluded, "Based on the opinion of the biological experts who prepared the analysis, the surveys conducted for the EIR have allowed for a sufficient degree of analysis to provide the information needed to determine the environmental consequences of the project." The Final Revised EIR also explained that 1,650.4 acres of the site (63 percent) would be preserved and managed as a permanent Habitat Preserve designed to protect biological values and preserve connectivity for a wide range of species, which feature of the proposed project remains unchanged.

The Final Revised EIR accordingly considered proposed project impacts to Crotch's bumble bee and disclosed relevant information concerning the pending litigation related to its listing. The biological experts determined Crotch's bumble bee is unlikely to occur on the project site based on the best available information, including the lack of suitable habitat on site.

Revision and surveys are not required as a result of the Third District's decision. The Final Revised EIR's analysis of Crotch's bumble bee was not challenged in the prior litigation. Further, the Final Revised EIR considered

the impact of the proposed project on Crotch's bumble bee populations and habitat. Potential or actual listing is not significant new information or changed circumstances in light of this prior analysis.

Litigation was filed in October 2020 challenging the City's certification of the Final Revised EIR. The litigation alleged deficiencies in the Final Revised EIR related only to wildfire and evacuation, coastal California gnatcatcher, and western spadefoot toad. There was no challenge to the analysis related to Crotch's bumble bee.

In March 2022, the San Diego County Superior Court (Hon. Katherine A. Bacal, presiding) issued a ruling identifying deficiencies in the Final Revised EIR related to evacuation in the event of a wildfire. In March 2022, the trial court entered judgment and a writ of mandate (order) directing the City to set aside certification of the Final Revised EIR and the proposed project approvals for the proposed project as a result of the deficiencies related to evacuation/wildfire.

The prior litigation did not challenge the sufficiency of the Crotch's bumble bee analysis. The judgment also did not identify any errors related to the analysis of potential impacts to Crotch's bumble bee. In this post-judgment CEQA compliance action, the City is only required to revisit the EIR regarding those issues found deficient in the prior litigation—that is, evacuation/wildfire (Ione

Valley Land, Air, & Water Defense Alliance, LLC v. County of Amador, supra, 33 Cal.App.5th 165, 170-173, as modified [Mar. 20, 2019]; Protect the Historic Amador Waterways v. Amador Water Agency [2004] 116 Cal.App.4th 1099, 1112, as modified [Apr. 9, 2004]). The City need not address other claims that could have been previously litigated, and such claims are barred by the legal doctrine of res judicata (Ibid.; Ballona Wetlands Land Trust v. City of Los Angeles [2011] 201 Cal.App.4th 455, 480–481 ["any challenge to an EIR or other agency action arising from facts in existence before the entry of judgment must be asserted in the proceeding before the entry of judgment. The failure to assert such a challenge before the entry of judgment . . . precludes a party from asserting the challenge in connection with post-judgment proceedings concerning compliance with the writ"]). So that CEQA does not become "a never-ending battle of attrition with ever-changing targets," at this stage of post-judgment corrective action, the interests of finality must take precedence (Ballona Wetlands Land Trust v. City of Los Angeles, supra, 201 Cal.App.4th at pp. 480–481, Tiburon Open Space Committee v. County of Marin [2022] 78 Cal.App.5th 700, 752).

Even if the City were to revisit potential impacts to Crotch's bumble bee despite the finality of the Final Revised EIR's analysis, mere listing of a species—or here, the mere potential for future listing of the bee—does not

trigger the need to revise an EIR or section thereof where the potential impact of the proposed project on the species population and habitat were discussed in the EIR.

The Court of Appeal in Chaparral Greens v. City of Chula Vista (1996) 50 Cal.App.4th 1134, 1147–1149 considered a similar issue where gnatcatcher was listed as threatened after the close of public comment on a program EIR but before certification. The court held that the listing of gnatcatcher did not trigger revision and recirculation under CEQA's standards (Id.). The listing had "no bearing on the impact of the project on the California gnatcatcher population and habitat in Otay Ranch, which was fully discussed in the PEIR."

In Fort Mojave Indian Tribe v. Department of Health Services (1995) 38 Cal.App.4th 1574, 1605, the court held that a new regulation designating critical habitat for an endangered species, the tortoise, was not "significant new information" triggering revision and recirculation under California Public Resources Code, Section 21166 (Id. at pp. 1605–1606). The court reasoned, "however legally characterized, the habitat would be affected the same as before. And the environmental review and mitigation measures that had already been completed focused on the real effects of the project not just on 'the tortoise,' but on its habitat (previously termed 'crucial'), which is exactly how the project would impact on the species" (Id. at p. 1605). Thus, the new regulation did not constitute new

information requiring a recirculation or a supplemental environmental impact report.

As in these cases, the Final Revised EIR already evaluated the effects of the proposed project to Crotch's bumble bee population and habitat. Thus, the City is not required to revise the Final Revised EIR to survey for Crotch's bumble bee as a result of the recent Almond Alliance decision.

To the extent the comment asserts that Crotch's bumble bee has been collected "five times in Mission Trails and East Elliott between May 2011 and late July 2020" and "in June 2010 on Miramar just south of Poway," this information was available prior to certification of the Final Revised EIR in September 2020, does not constitute new information, and was required to be raised in connection with the prior EIR review. In this post-judgment CEQA compliance action, the City is only required to revisit the EIR regarding those issues found deficient in the prior litigation—that is, evacuation/wildfire.

Even if considered, the information cited also would not change the determination made in the Final Revised EIR. The low potential to occur determination was made for Crotch's bumble bee on the project site because the habitats present on the project site do not resemble those described in the listing petition. Further, a broadly occurring distribution

In April, 2019, the Fish and Game Commission voted to give Crotch's Bumblebee candidate status. That decision was legally challenged in September 2019, and overruled in November 2020. On May 31, 2022, before the FREIR was sent out for public comment, the appellate court overturned the lower court's ruling and reinstated Crotch's bumblebee as a candidate species.

This matters because, according to the CNDDB, Crotch's bumblebee has been collected five times in Mission Trails and East Elliott between May 2011 and late July 2020. It was also captured in June 2010 on Miramar just south of Poway. All these collections are within about three miles of the Project site. All its known food plants are documented as occurring on the site in the May 2020 Biological Technical report for the previous DREIR on the Project. The vegetation communities described for the Project site in that document are also consistent with known Crotch's bumblebee habitat.

Why was Crotch's Bumblebee not surveyed for in the previous iteration of the Project EIR? This question should be answered in the response, but it is quite evident that no effort was made to survey for bees or flies for the EIR. Butterflies were the only pollinators systematically surveyed for, and the only wasp recorded was the large, obvious Tarantula Hawk that even botanists readily notice. There is no mention even of honeybees being observed in the field, let alone bumblebees. Had any attempt been made to search for bees, surely the ubiquitous presence of honeybees would have been noted!

O4-9 cont.

Thus, the Project has a high likelihood of a candidate listed species on the site, and no attempt was made to survey for that species. The species' legal condition changed before the DFEIR was issued in June, so it should have been the subject of focused surveys, and those surveys should have been performed in the last few months. This was not done, even though it is a straightforward effort.

The solution is simple: conduct focused surveys for Crotch's bumblebee on the Project site during the appropriate season (spring and summer). If the species is present, determine if it will be impacted by the Project or not. If it will be impacted, create suitable mitigations. If existing mitigation plans already protect it, present substantial evidence that this is the case. If it is not present on the site, present evidence of a suitable search.

This species was not covered by previous litigation, nor by previous EIRs. Here I present substantial evidence to warrant a survey to determine its status on the Project site, whether the Project impacts a population, and how to avoid or mitigate any impacts as required.

O4-10

Thank you for taking these comments. Please keep CNPSSD informed of all developments with this project and associated documents and meetings, through email to conservation@cnpssd.org and franklandis03@yahoo.com.

Sincerely,

Frank Landis

Frank Landis, PhD
Conservation Chair
California Native Plant Society, San Diego Chapter

from Oregon to Mexico, from the coast to the desert, as described in the California Natural Diversity Database implies a general lack of understanding regarding the species' actual suitable habitat and distribution. In addition, there is a lack of specific knowledge about the species regarding habitat usages, population status, and basic biological requirements and a lack of standardized survey protocol or methods. In sum, in this post-judgment CEQA compliance action, the City is only required to revisit the EIR regarding those issues found deficient in the prior litigation, that is, evacuation/wildfire. Impacts to Crotch's bumble bee were evaluated in the Final Revised EIR, and the time for challenging the adequacy of that evaluation has passed.

O4-10: This comment is the conclusion to the comment letter, provides contact information for questions, and requests that the commenters be informed on the proposed project. The City acknowledges the comment and notes it provides concluding remarks that do not raise new or additional environmental issues concerning the adequacy of the Recirculated Sections. The commenter will be placed on the list for receipt of public notifications in connection with the proposed project. No further response is required.

Comment Letter O5: California Chaparral Institute, July 25, 2022

O5

From: nature <nature@californiachaparral.org>
Sent: Monday, July 25, 2022 2:54 PM
To: Chris Jacobs
Subject: Fanita Ranch Revised EIR comments
Attachments: Fanita Ranch CCI comments 2022.pdf

Dear Mr. Jacobs,
Please find attached our comments on the Fanita Ranch Revised EIR. Confirmation of receipt would be appreciated.
Sincerely,

Richard W. Halsey
Director
California Chaparral Institute
www.californiachaparral.org
PO Box 545
Escondido, CA 92033

1

July 25, 2022

Mr. Chris Jacobs, Principal Planner
City of Santee Dept. of Developers
10601 Magnolia Ave.
Santee, CA 92071
Via email: cjacobs@cityofsanteeca.gov

RE: Fanita Ranch Final Revised EIR (SCH# 2005061118)

Dear Mr. Jacobs and Santee City Council Members,

In the mid-1990s, the city of Santa Rosa, California, ignored significant testimony provided during the public comment period that the proposed Fountaingrove II development was placing people in harm's way due to high fire risks.

The area where the Fountaingrove community was to be built had been burned in the ferocious, wind-driven 1964 Hanly Fire.

During October, 2017, the Fountaingrove community was devastated by the Tubbs Fire that killed 22 people and burned 5,643 structures, **despite the fact that many of the homes had fire safety features, appropriate defensible space, and vegetation modification zones.**

O5-1

In 2003, the wind-driven Cedar Fire swept through the proposed Fanita Ranch development footprint and the surrounding wildlands, causing devastation to many communities.

The Fanita Ranch Revised EIR and the Notice of Exemption for the project are eerily similar to the efforts made during the Fountaingrove II development proposal process – realistic concerns about wildfire risk are not adequately addressed and bureaucratic maneuvers are being attempted to circumvent important independent oversight, such as the Notice of Exemption for essential housing. This pattern has been repeated several times over the years by the City of Santee during its efforts to develop the Fanita Ranch area.

The proposed Project fails to incorporate the scientific literature on the influence of human communities on wildfire (e.g. Syphard et al., 2007), recorded observations of recent and historical wildfire event patterns both within and surrounding the proposed site

www.californiachaparral.org PO Box 545, Escondido, CA 92033 760-822-0029

O5-1: The comment discusses the Fountaingrove II development constructed in the 1990s in Santa Rosa, California, and the Tubbs Fire. The comment suggests that the proposed project and its wildfire risk are comparable to that development and suggests that the California Environmental Quality Act (CEQA) or the development review process is being circumvented.

The proposed project is not comparable to the Fountaingrove II Project. The Fountaingrove II Project was built prior to the mandate for inclusion of ignition-resistant measures in new development, which was introduced in the Building Code (2007) and was further built without the benefit of the latest ignition-resistant construction methods and materials. Current fire safety standards now far surpass those found in the 2007 Building Code, and the ignition- and fire-resistant features of the proposed project are extensive. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d, and Fire Protection Plan (Appendix P1), Section 3.1, for details of the ignition- and fire-resistant features of the proposed project and examples of other ignition-resistant and fire-hardened communities, the features and materials they are required to employ, and their site-wide fire safe landscaping and defensible space. The homes in the Fountaingrove community that were lost burned primarily due to ember intrusion and home-to-home ignitions due to the lack of ember-intrusion and

(Keeley et al. 2006, Keeley et al. 2009), and the public interest of preserving the aesthetic beauty of native ecosystems, and of protecting the individual rights to life, liberty and property for the proposed project's future occupants.

O5-1 cont.

As the Tubbs Fire resulted in an "unprecedented" loss in lives and property for California, the nearly identical Hanly fire of 1964, under a similar spatial trajectory and weather pattern, resulted in so much less of an impact. Why? It is clear that two factors in particular are the most salient - those of wind and population growth.

And now, the City of Santee wants to create another situation where a community will be placed in harm's way, failing to learn the lessons of history.

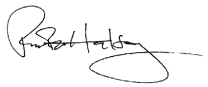
Therefore, we are in full support and concur with the objections and requests as detailed in the July, 2022, Preserve Wild Santee comment letter by Van Collinsworth on the Fanita Ranch Final Revised EIR.

The California Chaparral Institute has endeavored over the past 20 years to assist communities to adapt to California's fire prone environment. Although we prefer a collaborative process, we have also turned to the courts to protect lives, property, and the environment when projects are proposed that threaten the public's wellbeing and cause significant environmental harm.

O5-2

We did not have standing to participate in a criminal negligence lawsuit in connection with the Fountaingrove development process. However, it is reasonable to assume that given the public's growing awareness of fire danger and the growing case load of wildfire liability lawsuits, there will be a significant number of citizens and groups who will have standing to ask the court to assign responsibility to those who approve developments in known fire corridors, such as the proposed Fanita Ranch development.

Sincerely,



Richard W. Halsey
Director
The California Chaparral Institute
rwh@californiachaparral.org/760-822-0029

Cited References:

Keeley, J.E. 2017. "Why were California's wine country fires so destructive?" The Conversation, Oct. 11, 2017. From https://theconversation.com/why-were-californias-wine-country-fires-so-destructive-86043

other ignition-resistant features that are standard today and that would be implemented at Fanita Ranch. The comment cites 2006, 2007, and 2009 literature that does not analyze modern, fire hardened communities such as the proposed project. Modern communities (including the proposed project) include fire safety features that either were not available or were not utilized when the literature was published. The comment provides opinion, not substantiated with evidence, research, findings, or facts due to its reliance on older, fire and/or ember vulnerable structures lacking the layered and redundant fire protection system proposed at Fanita Ranch. This same system has been used in many new master planned communities that have been tested by wildfire and performed extremely well. Refer to Fire Protection Plan (Appendix P1), Section 3.1, for additional details.

Regarding the development review process and CEQA compliance, please refer to the Section 0.0, Preface, of the Recirculated Sections and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, which describe the proposed project's extensive environmental review process to date and current corrective action to achieve CEQA compliance.

O5-2: This comment provides concluding remarks that do not raise new or additional environmental issues concerning the adequacy of the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

3

Keeley, J. E., H. Safford, C. J. Fotheringham, J. Franklin, and M. Moritz. 2009. The 2007 southern California wildfires: lessons in complexity. Journal of Forestry 107:287-296.

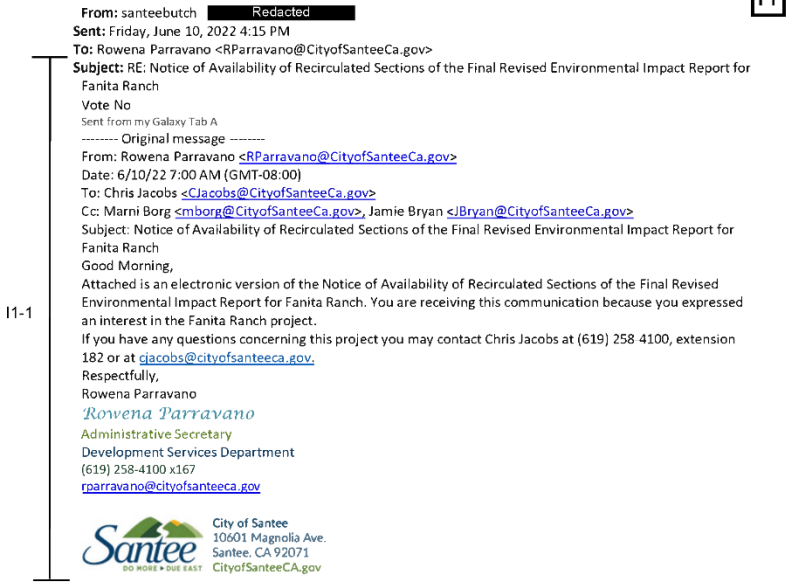
Keeley, J. E., C. J. Fotheringham, and M. A. Moritz. 2004. Lessons from the 2003 wildfires in southern California. Journal of Forestry 102:26-31.

Regalia, C, R. Allen, M. Rich, B. Smith, and C. Parkinson. 2001. Hillsides and Ridgelines, A Survey and Analysis of Hillside and Ridgeline Subdivisions in Santa Rosa, Santa Rosa Department of Community Development Planning.

Syphard et al., 2007. "Human Influence on California Fire Regimes" in Ecological Applications, 17(5), 2007, pp. 1388–1402.

Comment Letter I1: santeebutch, June 10, 2022

I1



From: santeebutch [Redacted]
Sent: Friday, June 10, 2022 4:15 PM
To: Rowena Parravano <RParravano@CityofSanteeCa.gov>
Subject: RE: Notice of Availability of Recirculated Sections of the Final Revised Environmental Impact Report for Fanita Ranch

Vote No

Sent from my Galaxy Tab A

-------- Original message --------
From: Rowena Parravano <RParravano@CityofSanteeCa.gov>
Date: 6/10/22 7:00 AM (GMT-08:00)
To: Chris Jacobs <CJacobs@CityofSanteeCa.gov>
Cc: Marni Borg <mborg@CityofSanteeCa.gov>, Jamie Bryan <JBryan@CityofSanteeCa.gov>
Subject: Notice of Availability of Recirculated Sections of the Final Revised Environmental Impact Report for Fanita Ranch

Good Morning,

Attached is an electronic version of the Notice of Availability of Recirculated Sections of the Final Revised Environmental Impact Report for Fanita Ranch. You are receiving this communication because you expressed an interest in the Fanita Ranch project.

If you have any questions concerning this project you may contact Chris Jacobs at (619) 258-4100, extension 182 or at cjacobs@cityofsanteeca.gov.

Respectfully,

Rowena Parravano

Rowena Parravano
Administrative Secretary
Development Services Department
(619) 258-4100 x167
rparravano@cityofsanteeca.gov

City of Santee
10601 Magnolia Ave.
Santee, CA 92071
CityofSanteeCA.gov

I1-1

I1-1: The comment states "vote no" in response to the email Notice of Availability of Recirculated Sections of the Final Revised EIR for Fanita Ranch. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I2: Janet McLees, July 5, 2022

I2

From: Janet Mc
To: Chris Jacobs
Subject: Recirculated Sections of Final Revised EIR for Fanita Ranch
Date: Tuesday, July 5, 2022 6:55:42 PM

Dear Mr Jacobs,

I2-1 I have many concerns regarding the intersection of wildfires, fire evacuations, and our recurring Santee traffic jams in and around Mast Blvd, Magnolia Ave, and El Nopal Rd. Frantic parents fighting evacuation traffic in order to pick up their children is one nightmare scenario. Another concern are the many campground trailers and RVs trying to exit in a panic, with or without the cars they often tow. Could one stalled RV or one panicking driver unfamiliar with the streets cause bedlam as the fire and smoke increases? And please don't forget our seniors and disabled folks at the Edgemore Hospital and their special needs during an evacuation scenario.

I2-2 Most of us have witnessed fires in our northern hills especially while ash falls like unwanted snow. We know the serious fire threat that CalFires has identified in our northern hills and valleys. The increasing fires with unpredictable winds in our southwestern states have been experienced here in Santee way too often. Again and again we have had to utilize wildfire fighters from all over these south western states. Too often now we find limited availability of these brave firefighters due to the many concurrent fire events. I do appreciate the idea of a fire station in the Fanita Ranch area, but these brave firefighters have a different skill set than those trained by CalFire to battle these unpredictable, wind fueled wildfires.

I2-3 I request that evacuation times be studied and published specific to the following circumstances:
- Concurrent with West Hills High School, Carlton Oaks School, Carlton Hills School, Rio Seco School, Cajon Park School, and Santana High School evacuations as well as morning and afternoon student transport times.
- Concurrent with Santee Lakes Campground evacuations.
- Concurrent with Edgemore Hospital evacuations.

I2-4 As a homeowner in Santee I wonder how long it will be until the day many of us will no longer be able to afford these horrendous increases in fire insurance? Our quality of life is impacted by these fires regularly and on so many different levels.

I2-5 Adding 3000 more homes in this remote area and the many associated vehicles will only exacerbate these problems. I was pleased that the illegal firecrackers and pop-bottle rockets that were heard in my neighborhood did not ignite a fire on the 4th of July. I was saddened to see the extensive evidence of this on the morning of July 5th and the thought of it in the remote area of Fanita Ranch surrounded by its pristine hills is frightening.

I2-6 I request confirmation of receipt of this letter. Thank you.

Sincerely,
Janet McLees
Santee resident

I2-1: The comment raises concerns based on existing traffic congestion that occurs within the City, presumably at specific times of the day. The concerns raised are not congruous with an evacuation scenario. Comparing daily traffic congestion with an evacuation is inappropriate because evacuations are managed events that include intersection control, phased or surgical evacuation notices, and a priority to move populations that are at greatest risk. Emergency managers are focused on moving populations that are at risk. Pre-planning for wildfire evacuations is a mandatory practice at schools. Schools, including Santee schools, include internal emergency plans/safety plans that may include parent pickup but may also include busing students off site if necessary or keeping children and staff on site when it is a safer alternative to evacuation. Specifically, the Santee school districts have developed a Uniform Evacuation Plan that is customized to each school and certifies each school year by the school administration to ensure that the plan is up to date. Each plan includes procedures for different situations, chain of command (e.g., incident commander, safety officer, student release, and accountability staff), communication plan (internal and with parents), and release procedure. In case of an emergency, each school would inform parents if they are able to pick up their students on site or to meet at an off-site evacuation location. This procedure is consistent with

the County of San Diego Operational Area Emergency Operations Plan, the Unified San Diego County Emergency Services Organization and County of San Diego manual (Annex Q), which states that (Annex Q, p. 20):

> If evacuation of public schools is required, students will normally be transported on school buses to other schools outside the risk area or to a reunification point where parents/guardians can pick up their children. It is essential that the public is provided timely information on where parents/guardians can pick up their children and the security procedures that are in place to ensure their protection. The OA Emergency Operations Center will coordinate with the County Office of Education for the coordination of school evacuations, as appropriate.

The comment raises concerns about "panic." The Wildland Fire Evacuation Plan (Appendix P2) explains that, generally speaking, while "citizen reactions may vary during an evacuation event, . . . several studies indicate that orderly movement during wildfire and other emergencies is not typically unmanageable. Evacuation can be made even less problematic through diligent public education and emergency personnel training and familiarity" (Wildland Fire Evacuation Plan [Appendix P2], Section 6.5). Emergency responders will manage evacuations in compliance with the current County/City

Annex Q (Evacuation) and the 2020 City of Santee Emergency Operations Plan, which provide a playbook to be used in the event of an emergency and incorporate several means of reducing fear and panic levels, including through providing effective notifications, directives, and information from credible sources, and providing coordinated assistance for individuals with special needs. Emergency personnel are further trained to address anxious and panicking residents during an evacuation scenario (Wildland Fire Evacuation Plan [Appendix P2], Section 6.5). The history of wildfire evacuations in San Diego County show evacuations have been safe and effective through implementing these plans.

In any case, the evacuation time modeling takes into account the stop-and-go nature of a mass evacuation to provide a worst-case scenario where everyone leaves at once and must yield to each other as they leave the evacuation area. Scenario 3 shows the times it would takes for all residents to take all of their vehicles and leave the evacuation area. This approach is more conservative than that shown in the Operational Area Emergency Operations Plan by the Unified San Diego County Emergency Services Organization and County of San Diego (Annex Q). Page 16 of Annex Q recommends determining evacuation times by assuming that the evacuating population would only take the necessary number of vehicles to leave the evacuation area. By contrast, the

evacuation study assumes that the evacuating population would take every vehicle that they own, thus increasing the demand on the evacuation roadway network. This assumption accounts for "panic" type reactions by residents where they take more vehicles than necessary and slow an evacuation. The study does not take into account residents that may "panic" and leave the area prior to an evacuation order because, if such a case did occur, these early evacuees would have already arrived in a safe area by the time the evacuation order is issued.

The comment also cites concerns regarding the motorhomes/RV population and asks whether a stalled RV would impact evacuations. Initially, note that RV park evacuation has been contemplated within the proposed project's Wildland Fire Evacuation Plan (Appendix P2) and evacuation modeling conducted by CR Associates (2022), Appendix D of the Wildland Fire Evacuation Plan. As shown on Figures 2, 4A, and 5A, of the evacuation modeling, Santee Lakes RV Resort and Santee Lakes Campgrounds land uses are included in the evacuation area. Refer to Appendix D of the Wildland Fire Evacuation Plan (Appendix P2).

In the event of a wildfire evacuation, first responders and Incident Command would consider the need to evacuate these areas, the time available, and whether these populations/areas are considered at risk. If these populations are determined to be at risk, they would be

evacuated with specific directions, intersection control, and available equipment to move a stalled RV if necessary. During an evacuation, there are standard procedures for moving vehicles from evacuation routes and other actions that may be taken should such an incident occur (Wildland Fire Evacuation Plan [Appendix P2], Sections 2 and 6.4). These procedures are practiced by law enforcement and fire personnel and, in an evacuation event, may include pushing the vehicles to the side of the road so that lanes are free or towing them from the area, depending on time available. When traffic needs to be moved, emergency managers are adept at reacting to issues and using available resources to manage them. The Wildland Fire Evacuation Plan (Appendix P2) and CR Associates evacuation memorandum describe additional actions that may be used to expedite evacuation in such a circumstance, including "providing additional lead time in issuing evacuation orders, providing alternative signal control at downstream intersections, utilizing additional off-site routes or directing traffic to roadways with additional capacity, implementing contra-flow lanes, issuing 'shelter-in-place' orders when determined to be safer than evacuation," etc. (Refer to Appendix D of the Wildland Fire Evacuation Plan [Appendix P2]).

The California Environmental Quality Act (CEQA) does not require the City to analyze every conceivable situation that may occur or engage in undue speculation,

particularly in the context of an evacuation event that presents changeable and unpredictable scenarios (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors [2013] 216 Cal.App.4th 614, 639–640; San Joaquin Raptor Rescue Center v. County of Merced [2007] 149 Cal.App.4th 645, 666; CEQA Guidelines, Section 15151). The Court of Appeal in League to Save Lake Tahoe Mountain etc. v. County of Placer (2022) 75 Cal.App.5th 63, 139–140, denied (May 18, 2022), recently found the County of Placer was not required to consider various suggested "what if" evacuation scenarios, including a blocked evacuation route or someone at the end of the queue responding to embers and smoke drifting across the road. The Court of Appeal analysis is informative here:

> Courts have made clear that "CEQA does not require evaluation of speculative impacts (Guidelines, § 15145)" (National Parks & Conservation Assn. v. County of Riverside [1999] 71 Cal.App.4th 1341, 1364). "Agencies are not required to engage in 'sheer speculation' as to future environmental consequences of the project" (Chaparral Greens v. City of Chula Vista [1996] 50 Cal.App.4th 1134, 1145, quoting Kings County Farm Bureau v. City of Hanford [1990] 221 Cal.App.3d 692, 738).

CEQA also does not require an analysis to be exhaustive. It is "not necessary that the analysis be so exhaustively

detailed as to include every conceivable study or permutation of the data" (San Joaquin Raptor Rescue Center v. County of Merced [2007] 149 Cal.App.4th 645, 666; Guidelines, § 15151). "An EIR need not include all information available on a subject[;] . . . [All that is required is] sufficient information and analysis to enable the public to discern the analytic[al] route the agency traveled from evidence to action [Citation]. A project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. . . . That further study . . . might be helpful does not make it necessary" (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors [2013] 216 Cal.App.4th 614, 639–640).

It is difficult to predict how an actual evacuation will unfold and determine how a project may impact it. An evacuation is developed and directed in real time by those conducting it in response to the unique conditions before them. As a member of the County's Office Of Emergency Services explained to the planning commission, an evacuation is "always going to be difficult. There's no evacuation that ever goes textbook smooth. It's like running a play in football. You call the play and then you hope things go as best as they can. . . .

CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive. (Guidelines, §

15151)" (Kings County Farm Bureau v. City of Hanford, supra, 221 Cal.App.3d at p. 712). "An EIR is required to evaluate a particular environmental impact only to the extent it is 'reasonably feasible' to do so" (Rialto Citizens for Responsible Growth v. City of Rialto (2012) 208 Cal.App.4th 899, 937, quoting CEQA Guidelines, Section 15151).

The evidence here indicates that the County did not abuse its discretion in determining its methodology for evaluating the impact to its evacuation plan or selecting the standard of significance and that substantial evidence supports the EIR's conclusion. The EIR's analysis provides a reasonable explanation under modeled circumstances of how the project will affect its residents' ability to evacuate and emergency responders' ability to access the area and the site.

Similarly, here, the City modeled reasonable evacuation scenarios and provided a detailed narrative explanation of how the proposed project will affect evacuation and emergency responders' ability to access the area and the site. While there are unlimited "what if" scenarios that may occur in an evacuation, evaluation of every conceivable scenario would be speculative and is not required by CEQA. However, the evacuation "playbook" (Annex Q [Evacuation] and 2020 City of Santee Emergency Operations Plan, Wildland Fire Evacuation Plan [Appendix P2]) would be followed by first responders in such

scenarios to foster safe and effective evacuations and deal with such unknowns as they may arise.

Lastly, regarding immobile populations, including those at Edgemoor Hospital, it is highly unlikely that the hospital would need to be evacuated given its location. However, assuming an evacuation was considered necessary, immobile populations would be evacuated via shuttle buses and similar vehicles with medical assistance on board. Refer also to Wildland Fire Evacuation Plan (Appendix P2), Section 6.5.1, Evacuation of Special Populations, and County Annex Q (Evacuation).

I2-2: The comment raises concerns about wildfires in Santee's northern hills and the lack of firefighter availability and of the new fire station personnel being untrained to fight wildfires. The comment is not stating facts and expresses opinions that are unsubstantiated. In fact, the wildfire potential for the proposed project has been extensively analyzed to understand the types of wildfires that may be possible given the site's fuels, terrain, and weather/wind exposures. Based on those results, a wildfire-hardened project has been designed and would include a very high level of ignition resistance along with managed landscapes and conversion of a large area of existing fuels to low fuel conditions. This would positively impact fire behavior in these hills by breaking up fuel beds and providing the equivalent of a large fire break. Wildland firefighters are abundant in San Diego County, Southern California,

California, and western states. Automatic and mutual aid agreements quickly free up firefighters for wildfires as they are needed. In addition to local and state firefighters, there are federal resources that become available in the largest fires. Regarding the planned on-site fire station, although the focus of this station's emergency calls will be medical response and occasional structural fires, the personnel will be cross-trained to attack wildfires. This fire station, due to its location, can provide fast response to an unanticipated vegetation ignition and stop it before it expands. However, the primary way that wildfires are directly attacked is via air support and that would be available, as it is now, and unaffected by the proposed project except that it would enable "anchor points" from which the aircraft can tie in their retardant drops to provide more accurate and effective drops. This is beneficial to existing Santee neighborhoods south of Fanita Ranch.

I2-3: The comment requests that evacuation modeling consider additional scenarios of concurrent school evacuations and dropoffs, campground evacuation, and Edgemoor Hospital evacuation. Refer to response to comment I2-1. CR Associates and Dudek have conducted extensive fire evacuation scenarios, including Scenario 9, which is the worst-case scenario that assumes a mass evacuation of all land uses located north of Mast Boulevard at nighttime, when all residents are at home. This is considered to provide a representative worst-case scenario because it

assumes a mass evacuation and non-targeted evacuation scenario and maximizes the number of vehicles trying to exit the evacuation area by assuming that all residents are at home and that they would take all their vehicles with them. Emergency managers/law enforcement would not allow in-bound traffic into an evacuation area in such a scenario. The scenario is considered improbable but provides a representative evacuation time model that would adequately account for the circumstances cited in the comment.

Further, during a scenario where a mass evacuation or surgical evacuation is required, emergency management and first responders would control in-bound/out-bound traffic from the evacuating area. As such, it is unlikely that school traffic (standard morning and afternoon traffic) would be allowed into the evacuation area to create additional congestion/conflict with evacuating traffic. Refer to response to comment I2-1.

Santee Lakes Campgrounds land uses are included in the evacuation area studied. Refer to response to comment I2-1. Regarding Edgemoor Hospital, the hospital is located in an urban area with state-of-the-art care facilities, defensible spaces, and hospital grades filtration system. It is highly unlikely evacuation would be ordered or needed for the hospital. Again, refer to response to comment I2-1. Should an evacuation be needed, Edgemoor Hospital has signed an Emergency Mutual Aid Memorandum of

Agreement with other facilities that include policies and procedures for evacuating patients.[1]

The City has modeled multiple reasonable scenarios and provided a reasonable explanation of how the proposed project will affect residents' ability to evacuate and emergency responders' ability to access the area and the site. Evaluation of the commenter's suggested additional scenarios would be speculative and is not required by CEQA.

I2-4: This comment speculates regarding homeowner fire insurance rates and availability. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I2-5: The City acknowledges the comment expressing general opposition to the proposed project and concluding remarks but does not raise any issue concerning the environmental analysis in the Recirculated Sections of the Final Revised EIR. To the extent that the comment cites concerns with existing illegal

[1] San Diego Skilled Nursing and/or Long Term Care Facilities. n.d. "San Diego County Area Skilled Nursing and/or Long Term Care Facilities Emergency Mutual Aid Memorandum of Agreement." Accessed September 2022. http://www.cahf.org/Portals/29/DisasterPreparedness/Evac/san_diego_MOA.pdf.

activity (fireworks), such activity is better addressed in the first instance on enforcement by law enforcement agencies (Riverwatch v. County of San Diego [1999] 76 Cal.App.4th 1428, 1453). In any case, there is no evidence provided to suggest that the proposed project would exacerbate such activities. There is also no evidence to suggest that wildfire-hardened, master-planned communities such as the proposed project result in increased fire starts. To the contrary, the layered and strategically redundant fire protection features that protect the proposed project from wildfire are shown to reduce fire spread and would protect the open space vegetated areas from an on-site fire spread to off-site locales. Please refer to the Fire Protection Plan (Appendix P1) for additional details.

I2-6: This comment requests confirmation of receipt of this letter. The City confirms receipt of this letter. No further response is required.

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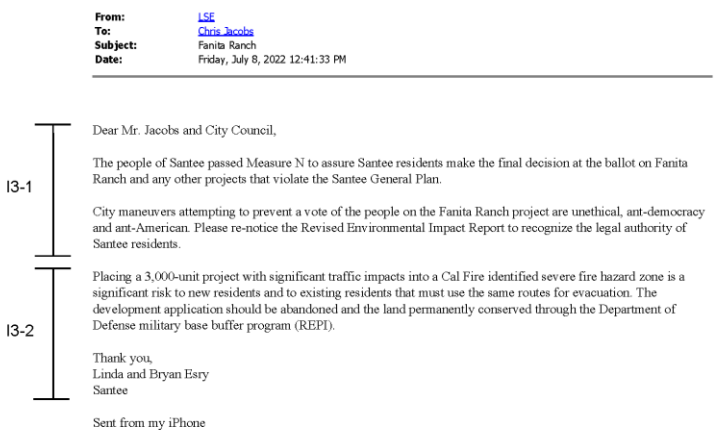
Comment Letter I3: Linda and Bryan Esry, July 8, 2022

I3



From: LSE
To: Chris Jacobs
Subject: Fanita Ranch
Date: Friday, July 8, 2022 12:41:33 PM

Dear Mr. Jacobs and City Council,

I3-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I3-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,
Linda and Bryan Esry
Santee

Sent from my iPhone

I3-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I3-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated

Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in

compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, is legally and socially infeasible and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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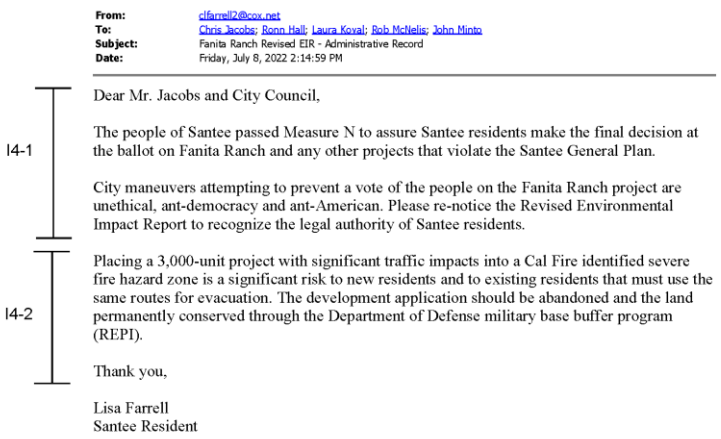
Comment Letter I4: Lisa Farrell, July 8, 2022

I4



From: clfarrell2@cox.net
To: Chris Jacobs; Ronn Hall; Laura Koval; Bob McNelis; John Minto
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Friday, July 8, 2022 2:14:59 PM

Dear Mr. Jacobs and City Council,

I4-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I4-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Lisa Farrell
Santee Resident

I4-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I4-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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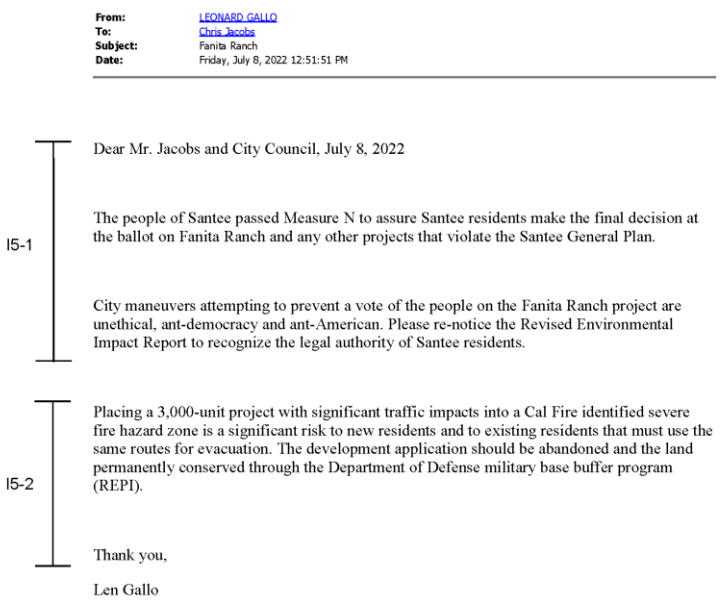
Comment Letter I5: Len Gallo, July 8, 2022

I5



From: LEONARD GALLO
To: Chris Jacobs
Subject: Fanita Ranch
Date: Friday, July 8, 2022 12:51:51 PM

Dear Mr. Jacobs and City Council, July 8, 2022

I5-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I5-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Len Gallo

I5-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I5-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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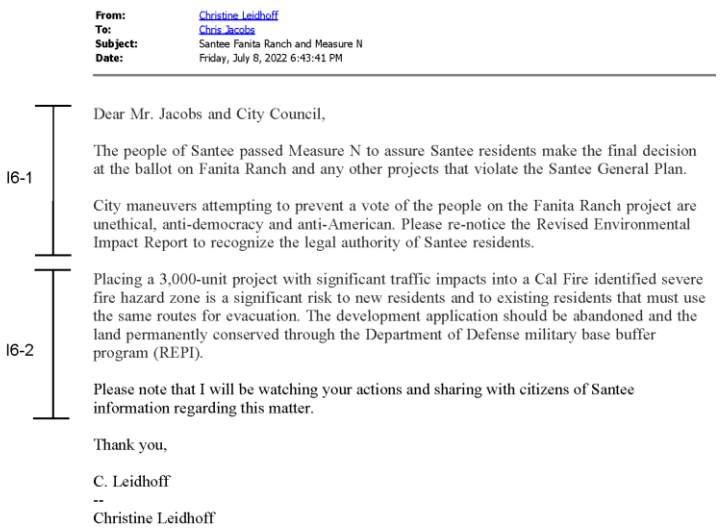
Comment Letter I6: Christine Leidhoff, July 8, 2022

I6



From: Christine Leidhoff
To: Chris Jacobs
Subject: Santee Fanita Ranch and Measure N
Date: Friday, July 8, 2022 6:43:41 PM

Dear Mr. Jacobs and City Council,

I6-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I6-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Please note that I will be watching your actions and sharing with citizens of Santee information regarding this matter.

Thank you,

C. Leidhoff
--
Christine Leidhoff

I6-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I6-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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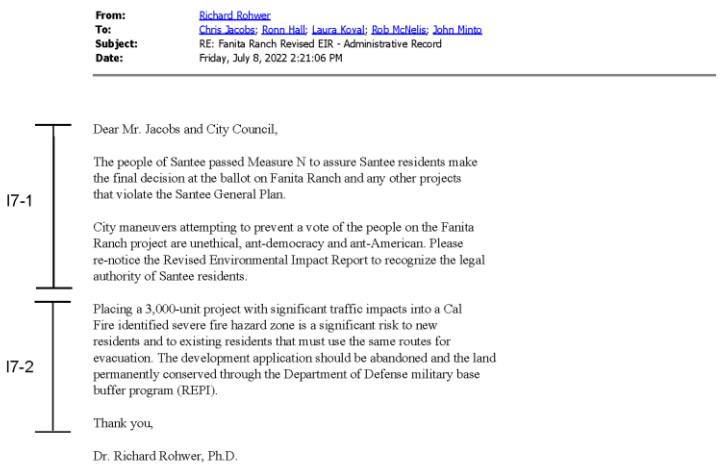
Comment Letter I7: Richard Rohwer, July 8, 2022

I7



From: Richard Rohwer
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Friday, July 8, 2022 2:21:06 PM

I7-1

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I7-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Dr. Richard Rohwer, Ph.D.

I7-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I7-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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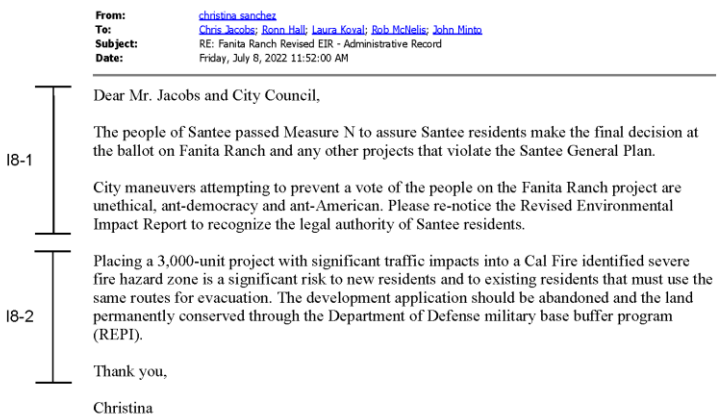
Comment Letter I8: Christine Sanchez, July 8, 2022

I8



From: christina sanchez
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Friday, July 8, 2022 11:52:00 AM

Dear Mr. Jacobs and City Council,

I8-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I8-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Christina

I8-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I8-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I9: Ellen Shively, July 8, 2022

I9

From: Ellen Shively
To: John Minto; Rob McNelis; Ronn Hall; Laura Koval; Chris Jacobs
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Friday, July 8, 2022 2:10:48 PM

To:
Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Santee City Council

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that would violate the Santee General Plan.

I9-1

Why is this measure being circumvented?

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American.

Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation.

I9-2

A better idea: The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Ellen Shively
Sierra Club of San Diego Chapter
Conservation Cmte
HP: 619-479-3412

I9-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I9-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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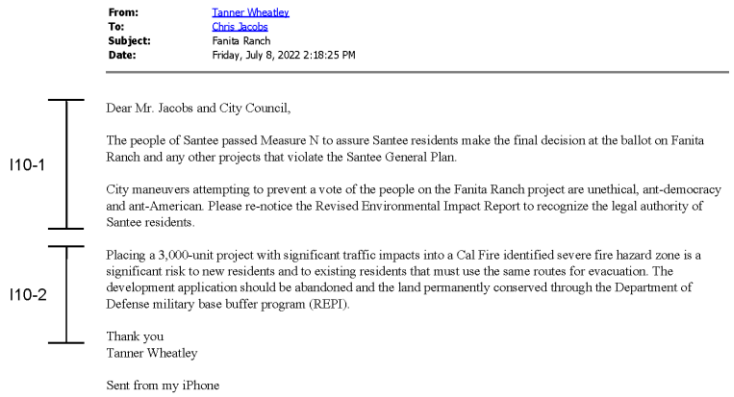
Comment Letter I10: Tanner Wheatley, July 8, 2022

I10



From: Tanner Wheatley
To: Chris Jacobs
Subject: Fanita Ranch
Date: Friday, July 8, 2022 2:18:25 PM

I10-1

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I10-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you
Tanner Wheatley

Sent from my iPhone

I10-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I10-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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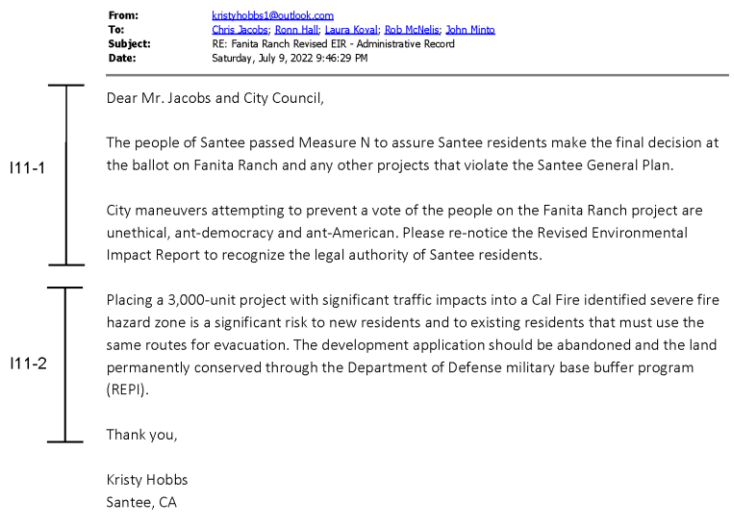
Comment Letter I11: Kristy Hobbs, July 9, 2022

I11



From: kristyhobbs1@outlook.com
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 9, 2022 9:46:29 PM

Dear Mr. Jacobs and City Council,

I11-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I11-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Kristy Hobbs
Santee, CA

I11-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I11-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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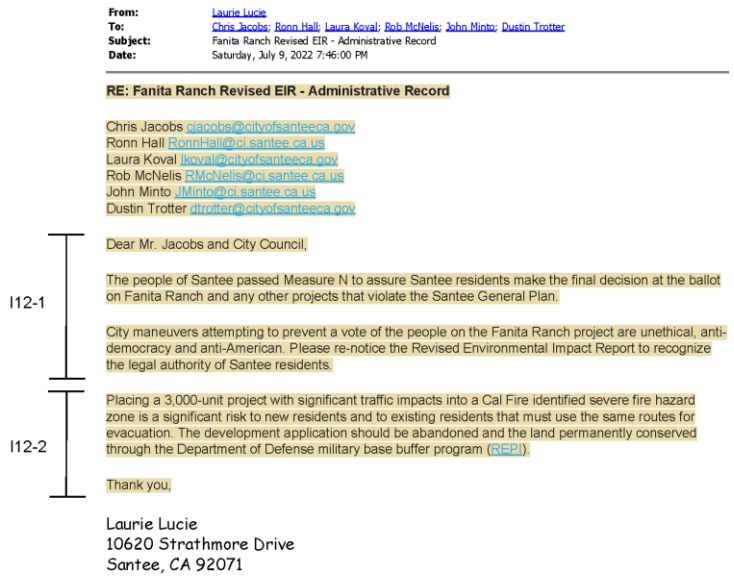
Comment Letter I12: Laurie Lucie, July 9, 2022

I12



From: Laurie Lucie
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 9, 2022 7:46:00 PM

RE: Fanita Ranch Revised EIR - Administrative Record

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall RonnHall@ci.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis RMcNelis@ci.santee.ca.us
John Minto JMinto@ci.santee.ca.us
Dustin Trotter dtrotter@cityofsanteeca.gov

Dear Mr. Jacobs and City Council,

I12-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I12-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Laurie Lucie
10620 Strathmore Drive
Santee, CA 92071

I12-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I12-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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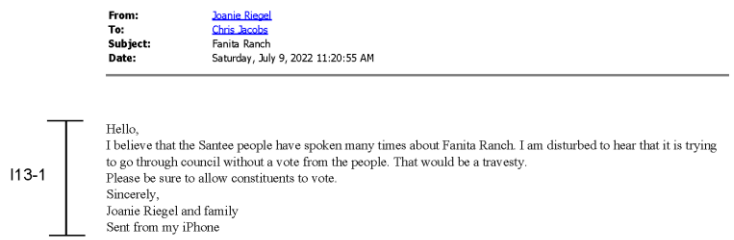
Comment Letter I13: Joanie Riegel, July 9, 2022

I13



From: Joanie Riegel
To: Chris Jacobs
Subject: Fanita Ranch
Date: Saturday, July 9, 2022 11:20:55 AM

I13-1

Hello,
I believe that the Santee people have spoken many times about Fanita Ranch. I am disturbed to hear that it is trying to go through council without a vote from the people. That would be a travesty.
Please be sure to allow constituents to vote.
Sincerely,
Joanie Riegel and family
Sent from my iPhone

I13-1: The comment states the commenter's belief that the people have spoken about the proposed project many times and that it should not go through City Council without a vote from the people. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I14: Marilyn Stella, July 9, 2022

I14

From: Marilyn Stella
To: Chris Jacobs
Subject: Fanita Ranch
Date: Saturday, July 9, 2022 12:15:50 PM

I14-1 The content of the letter below is not my composition, but I agree with everything expressed. I had attended a public meeting with the developers a few years ago, and my concerns had to do with traffic and fire evacuation. In answer to my questions, they identified plans to solve our traffic problems.....unfortunately, they referenced only our traffic problems TODAY....NOT when they would be adding at least 4,500 more motor vehicles to my neighborhood on Cuyamaca.

I14-2 Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I14-3 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Marilyn Stella
10071 Silverado Court
Santee, CA 92071

I14-1: This comment introduces the form letter and is concerned with adding 4,500 more vehicles on Cuyamaca Street. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims and response to comment I3-2.

I14-2: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I14-3: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I15: Cathy Bea, July 10, 2022

I15

From: Cathy Bea
To: Chris Jacobs; Ronn Hall; Laura Koval; John Minto; Dustin Trotter
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Sunday, July 10, 2022 8:38:21 AM

Dear Mr Jacobs and City Council,

I15-1

The great people of Santee passed Measure N to assure Santee residents make the FINAL DECISION at the ballot on Fanita Ranch and any other project that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American, the only voice we have is our vote. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I15-2

Placing a 3,000 unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program.

Sincerely
Cathy Bea
Proud Santee resident since 1980

I15-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I15-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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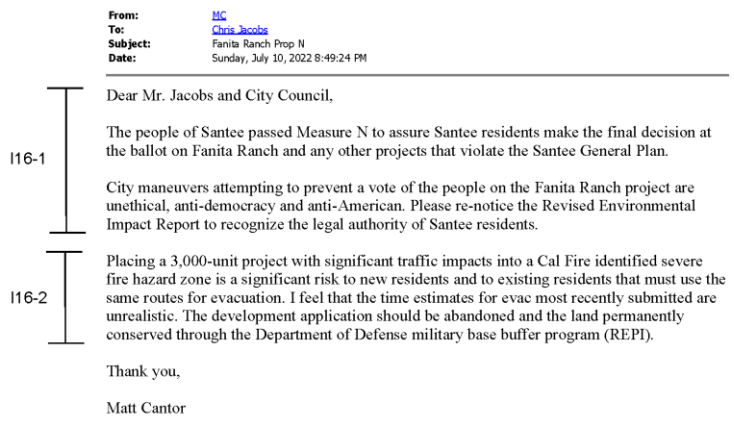
Comment Letter I16: Matt Cantor, July 10, 2022

I16



From: MC
To: Chris Jacobs
Subject: Fanita Ranch Prop N
Date: Sunday, July 10, 2022 8:49:24 PM

Dear Mr. Jacobs and City Council,

I16-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I16-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. I feel that the time estimates for evac most recently submitted are unrealistic. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Matt Cantor

I16-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I16-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I17: Colleen Cochran, July 10, 2022

I17

From: Colleen Cochran
To: Chris Jacobs; Ronn Hall; Laura Koval; Bob McNelis; John Minto; Dustin Trotter
Subject: Let the people vote on Fanita Ranch
Date: Sunday, July 10, 2022 1:21:42 PM

cjacobs@cityofsanteeca.gov
RonnHall@ci.santee.ca.us
lkoval@cityofsanteeca.gov
RMcNelis@ci.santee.ca.us
JMinto@ci.santee.ca.us
dtrotter@cityofsanteeca.gov

RE: Fanita Ranch Revised EIR - Administrative Record

I17-1 Dear Mr. Jacobs and City Council,

Leave that beautiful pristine wildlife alone, protect the Santee citizens from fire, and stop trying to skirt established laws.

I17-2 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I17-3 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Colleen Cochran

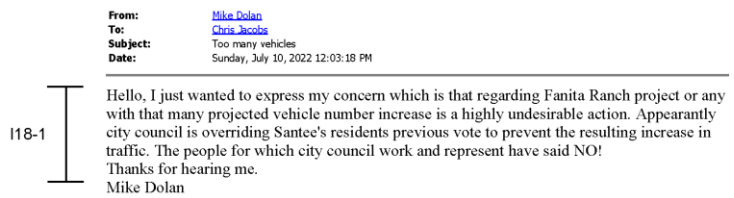
I17-1: This comment is concerned with protecting wildlife and protecting residents from fire. Please see Thematic Response 4 – Fire and Evacuation regarding wildfire. No further response is provided regarding wildlife impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims.

I17-2: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I17-3: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

Comment Letter I18: Mike Dolan, July 10, 2022

I18



From: Mike Dolan
To: Chris Jacobs
Subject: Too many vehicles
Date: Sunday, July 10, 2022 12:03:18 PM

I18-1

Hello, I just wanted to express my concern which is that regarding Fanita Ranch project or any with that many projected vehicle number increase is a highly undesirable action. Appearantly city council is overriding Santee's residents previous vote to prevent the resulting increase in traffic. The people for which city council work and represent have said NO!
Thanks for hearing me.
Mike Dolan

I18-1: This comment states the commenter's concern regarding the projected vehicle increase associated with the proposed project and that the City Council is overriding residents' previous no vote for the proposed project and its associated traffic increase. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation (which addressed vehicle trips), were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. In addition, please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required

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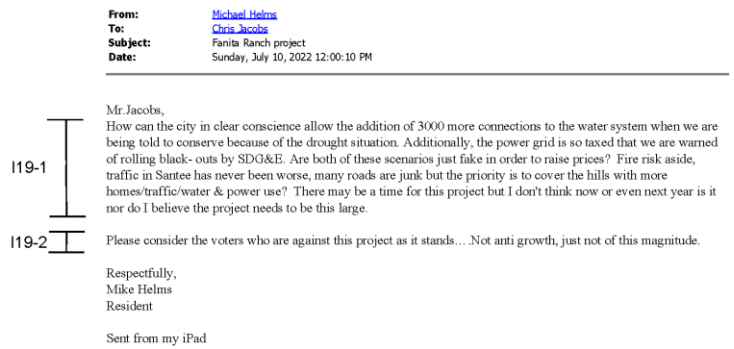
Comment Letter I19: Mike Helms, July 10, 2022

I19



From: Michael Helms
To: Chris Jacobs
Subject: Fanita Ranch project
Date: Sunday, July 10, 2022 12:00:10 PM

Mr.Jacobs,
How can the city in clear conscience allow the addition of 3000 more connections to the water system when we are being told to conserve because of the drought situation. Additionally, the power grid is so taxed that we are warned of rolling black- outs by SDG&E. Are both of these scenarios just fake in order to raise prices? Fire risk aside, traffic in Santee has never been worse, many roads are junk but the priority is to cover the hills with more homes/traffic/water & power use? There may be a time for this project but I don't think now or even next year is it nor do I believe the project needs to be this large.

I19-1

Please consider the voters who are against this project as it stands….Not anti growth, just not of this magnitude.

I19-2

Respectfully,
Mike Helms
Resident

Sent from my iPad

I19-1: This comment questions why the City would allow the addition of 3,000 homes to the water system during a drought and states that the power grid is already taxed and that traffic in the City is getting worse. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation and Utilities and Service Systems, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic and utilities impacts that would result from the implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I19-2: This comment asks the City to consider the voters who are against the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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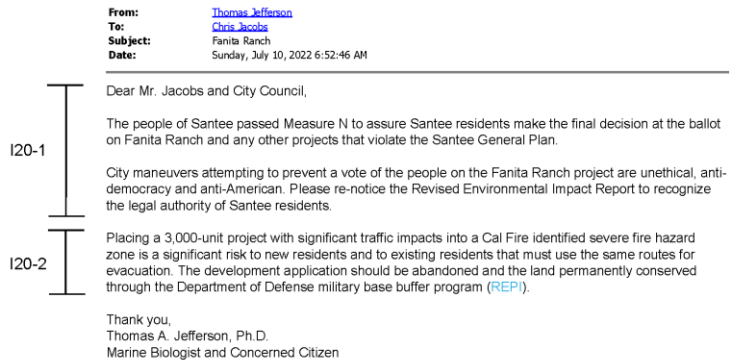
Comment Letter I20: Thomas Jefferson, July 10, 2022

I20



From: Thomas Jefferson
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 10, 2022 6:52:46 AM

Dear Mr. Jacobs and City Council,

I20-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I20-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,
Thomas A. Jefferson, Ph.D.
Marine Biologist and Concerned Citizen

I20-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I20-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I21: Sandy Kuntz, July 10, 2022

I21

From: Sandela Kuntz
To: Chris Jacobs; Ronn Hall; John Minto; Laura Koval; Rob McNelis; Dustin Trotter
Subject: Fanita Ranch Revised EIR -- Admin. Record
Date: Sunday, July 10, 2022 1:37:56 PM
Attachments: Fanita Ranch Revised EIR - Admin. Record .docx

July 10, 2022
Hello City Manager and Council Members,

Please see attached letter for the public record (as an attachment without my email address).
Thank you.

Sincerely,
Sandy Kuntz
Santee, CA

July 10, 2022

RE: Fanita Ranch Revised EIR - Administrative Record

To the Santee City Council and Manager,

My husband and I were two of the many who voted to pass Measure N to allow citizens of Santee to have a say in our city's development projects. Please allow Santee residents to use our legal authority as stated in N. Discontinue Fanita Ranch altogether.

I21-1

1. Part of the reason we voted to approve N is that the city council had a history of not respecting the terms of the City Plan, instead consistently amending it to force increased housing in lower zoned areas by changing the zoning as it suited them.

2. The other part of the reason -- the MAIN reason -- is that the majority of Santee citizens had already voted against Fanita Ranch. I remember this vote when I first moved here, perhaps before some of you lived here. Later Fanita Ranch was defeated based on the huge fire issue. Recently, couple neighborhood condos' insurance carriers notified the associations that they will no longer carry our Santee homes because of fire danger. This is serious as very few vendors are willing to insure at an affordable rate. Yet, at the same time, the city council and manager continue to push to develop new homes in a high fire danger area.

I21-2

3) When I went door to door canvassing for Houlahan for city council, I asked homeowners in various parts of our city, what is your major issue. Almost 100%, no matter where they lived in Santee, said they did not want Fanita Ranch, for reasons of traffic and fire concerns not realistically addressed (although there have been many expensive and slick brochures and presentations otherwise). The significant danger from fire still exists. The significant traffic issues remain too problematic.

Thank you for your time.

Sandy Kuntz
Santee resident

I21-1: This comment states that City residents should be able to vote on the proposed project due to Measure N. The comment further states that the reason residents should be able to vote is because City Council has amended the city plan in the past to increase housing in lower zoned areas and that residents have already repeatedly voted against the proposed project. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

This comment states a local condo community had their homeowner's insurance cancelled due to being in a wildfire area. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I21-2: This comment states that residents do not want the proposed project because of the traffic and fire concerns not being realistically addressed. Please refer to Thematic

Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided on the significant traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk, and subsection 4d, which addresses fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies.

Please refer to Section 4.18, Wildfire, of the Recirculated Sections, which adequately addresses the trial court's concerns regarding wildfire impacts from the proposed project.

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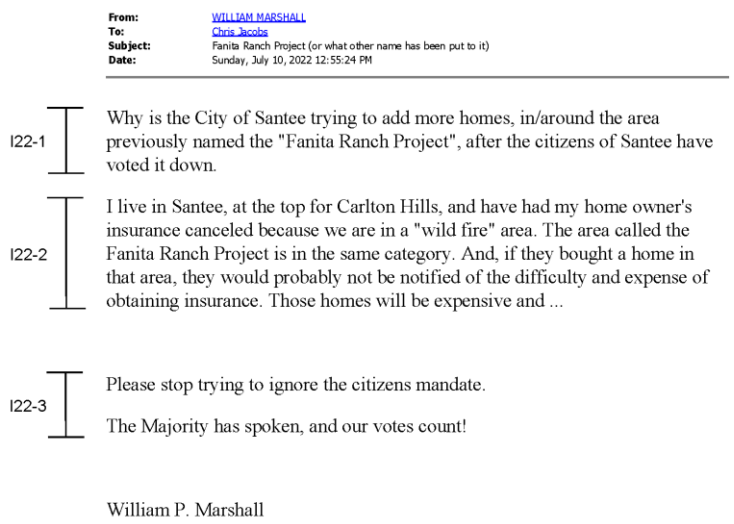
Comment Letter I22: William Marshall, July 10, 2022

I22



From: WILLIAM MARSHALL
To: Chris Jacobs
Subject: Fanita Ranch Project (or what other name has been put to it)
Date: Sunday, July 10, 2022 12:55:24 PM

I22-1 Why is the City of Santee trying to add more homes, in/around the area previously named the "Fanita Ranch Project", after the citizens of Santee have voted it down.

I22-2 I live in Santee, at the top for Carlton Hills, and have had my home owner's insurance canceled because we are in a "wild fire" area. The area called the Fanita Ranch Project is in the same category. And, if they bought a home in that area, they would probably not be notified of the difficulty and expense of obtaining insurance. Those homes will be expensive and ...

I22-3 Please stop trying to ignore the citizens mandate.

The Majority has spoken, and our votes count!

William P. Marshall

I22-1: This comment asks why the City is trying to add more homes in an area voted down by City residents. Please refer to response to comment I21-1 and Thematic Response 2 – Referendum and Measure N Applicability. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I22-2: This comment states that the commenter has had their homeowner's insurance cancelled due to being in a wildfire area and surmises that future residents living in the proposed project would have a similar issue. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I22-3: This comment asks that the City not ignore its citizens and that the majority who have voted do not want the proposed project. Please refer to response to comment I22-1.

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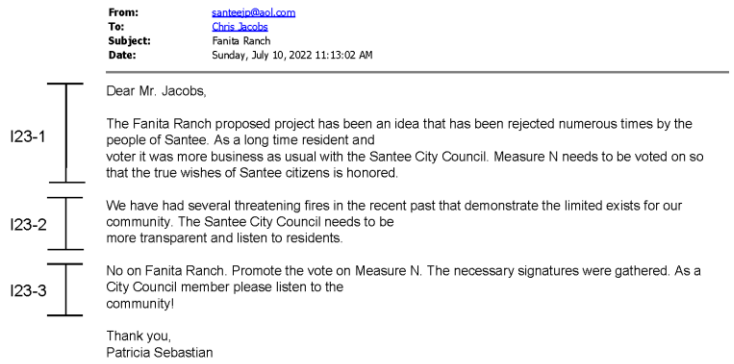
Comment Letter I23: Patricia Sebastian, July 10, 2022

I23



From: santeeip@aol.com
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 10, 2022 11:13:02 AM

Dear Mr. Jacobs,

I23-1 The Fanita Ranch proposed project has been an idea that has been rejected numerous times by the people of Santee. As a long time resident and voter it was more business as usual with the Santee City Council. Measure N needs to be voted on so that the true wishes of Santee citizens is honored.

I23-2 We have had several threatening fires in the recent past that demonstrate the limited exists for our community. The Santee City Council needs to be more transparent and listen to residents.

I23-3 No on Fanita Ranch. Promote the vote on Measure N. The necessary signatures were gathered. As a City Council member please listen to the community!

Thank you,
Patricia Sebastian

I23-1: This comment states that the proposed project has been rejected by voters and that Measure N needs to be voted on to honor the wishes of the citizens. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I23-2: This comment states that there have been several wildfires in the past that demonstrate the limits of the community. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, which details the features that would be provided to protect residents and structures from wildfire in a very high fire hazard severity zone.

I23-3: This comment promotes the vote of Measure N and states that the necessary signatures have been gathered. Please refer to response to comment I23-1.

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Comment Letter I24: Jeff Thomson, July 10, 2022

I24

From: Jeff T
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 10, 2022 10:12:43 AM

Chris,

Here is one Santee resident's (my) view of Fanita ranch, also posted today to the U/T website.

I24-1 This housing development plan has fatal flaws which remain unaddressed. The Santee residents, of which I am one, are not stupid. If you address these issues, we MAY vote for the additional housing:

I24-2 - As the prior poster noted, the plan offers the bare-bones minimum "improvements" to the 52. If you're familiar with the 52 and why various choke points exist, you'll quickly realize the proposed improvements will do nothing to help. In fact, an additional 3,000 households will make the 52 and Mast Blvd an absolute nightmare. In addition, we have the insulting position held by SANDAG that at no time will additional funds be spent on the 52. MAKE REAL IMPROVEMENTS TO THE POORLY DESIGNED 52'S CHOKEPOINTS.

I24-3 - Along the same theme as the point above in terms of traffic, is the fire hazard and evacuating the neighborhood in case of fire. It is IDIOTIC that a road to the northeast out of the community has not been proposed, one that would allow easy access to the 67. It is stupid that people who work to the north have to travel south, take Mast Blvd (making its traffic worse), and then take the 52 West (making its traffic worse), before taking the 15 to the north. ADD A CONNECTION FROM FANITA RANCH TO THE 67. The connection to Magnolia is not sufficient.

I24-4 - And what about the adverse effects to all the people who live in the Santee Lakes valley, who enjoy their peace and quiet? The plan proposes to make Fanita Parkway, which is a sleepy road with one lane in each direction, the primary thoroughfare to serve 3,000 households? Do you realize how much vehicle noise this will add to the Santee Lakes valley, particularly at night when it is peaceful and quiet? Do you realize how many fools are on loud motorcycles and fools who modify their mufflers? Do you realize how many people are camping along the banks of Santee Lakes, enjoying the quiet, and how camping there will never be the same if the road suddenly serves 3,000 households? The only way I can see to partially address this problem is to build sound walls on both sides of the road. But, even that will be a less than adequate solution. Naturally, if an exit to the northeast to the 67 were built, it would lessen the amount of traffic using Fanita Parkway. But, this would still be a major issue. Who are you to ruin the camping experience of those at Santee Lakes, and the peace and quiet of those who live in this valley?

I24-5 I am absolutely voting "No" on this project, as it has far too many poorly-thought out elements.

Jeff Thomson
JEFFTSD@GMAIL.COM

I24-1: This commenter is concerned with fatal flaws that remain unaddressed for the proposed project. This is an introductory comment proceeding the bulleted list of comments below, and no further response is required.

I24-2: This comment is concerned with traffic on State Route 52 and Mast Boulevard with the addition of the proposed project and inquires about making improvements to State Route 52. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic impacts or road improvements that would result from implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I24-3: This comment asks why a road northeast of the project site has not been proposed that would connect to State Route 67 for evacuation and general use (worker trips). The proposed project meets all the required standards for

ingress/egress; thus, another entrance/exit to the project site is not required. Also, refer to the Thematic Response 4 – Fire and Evacuation, specifically subsection 4b, which details several evacuation model scenarios for the proposed project and City in the case of a wildfire without the need of additional roads.

I24-4: This comment inquires about vehicle noise to existing residences and campers at the Santee Lakes campground valley from increased traffic on Fanita Parkway. The comment further suggests that sound walls be built on both sides of Fanita Parkway to lessen the noise. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under CEQA. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Noise, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). No response is provided on noise impacts from the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I24-5: The commenter does not support the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I25: Karen Till, July 10, 2022

I25

From: Karen Till
To: Chris Jacobs
Cc: Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch project
Date: Sunday, July 10, 2022 6:06:25 AM

Dear Mr. Jacobs and City Council,

Citizens of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

I25-1

We live in a democracy. As elected officials, it is your duty to respect the will of Santee voters, rather than avoid voters rights because it does not suit your interests. Any city officials attempting to prevent a vote of the people on the Fanita Ranch project should be considered unethical, anti-Democracy and anti-American.

I respectfully request you to please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I25-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you for your time. I trust that you will uphold Democracy and to represent the people's wishes, as these are among the duties you swore to uphold when taking office.

Sincerely Yours,
Karen Till, Professor of Geography

Contradictions from City Government...

I25-3

"He [Minto] noted that because the project would need an amendment to the city's General Plan, it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval."

"The proposed project has been deemed General Plan consistent and compliant as part of the City's Essential Housing Program and, accordingly, does not require a General Plan Amendment, Specific Plan, Development Agreement, Rezone, or other legislative act to proceed under the Essential Housing Program."

Recirculated Sections of Final Revised Environmental Impact Report Fanita Ranch Project

I25-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I25-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

I25-3: This comment provides a quotation from the City Mayor stating that the proposed project needs a General Plan Amendment and including an excerpt from the Recirculated Sections that states that the proposed project is consistent with the General Plan. The City notes that there is no source or date provided for the quotation. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

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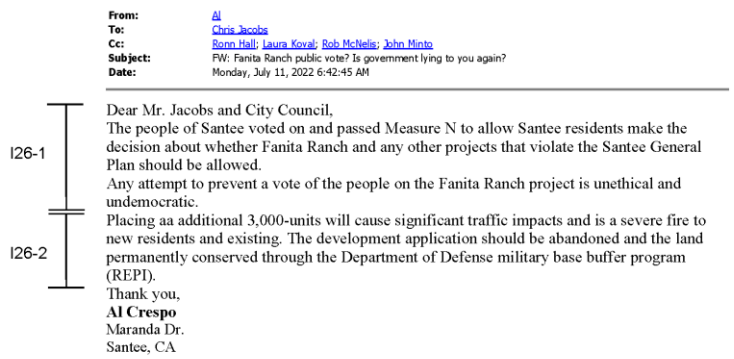
Comment Letter I26: Al Crespo, July 11, 2022

I26



From: Al
To: Chris Jacobs
Cc: Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: FW: Fanita Ranch public vote? Is government lying to you again?
Date: Monday, July 11, 2022 6:42:45 AM

I26-1

Dear Mr. Jacobs and City Council,
The people of Santee voted on and passed Measure N to allow Santee residents make the decision about whether Fanita Ranch and any other projects that violate the Santee General Plan should be allowed.
Any attempt to prevent a vote of the people on the Fanita Ranch project is unethical and undemocratic.

I26-2

Placing aa additional 3,000-units will cause significant traffic impacts and is a severe fire to new residents and existing. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).
Thank you,
Al Crespo
Maranda Dr.
Santee, CA

I26-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I26-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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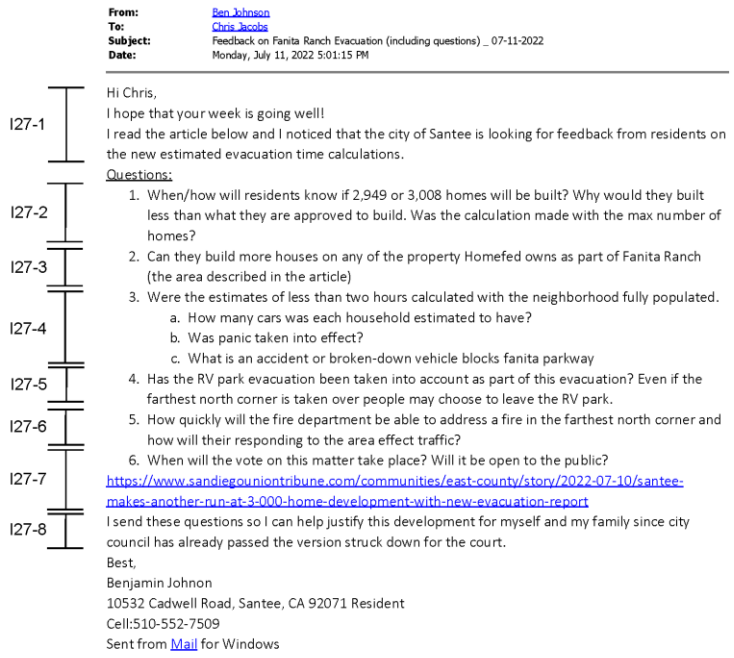
Comment Letter I27: Benjamin Johnon, July 11, 2022

I27



From: Ben Johnson
To: Chris Jacobs
Subject: Feedback on Fanita Ranch Evacuation (including questions) _ 07-11-2022
Date: Monday, July 11, 2022 5:01:15 PM

I27-1

Hi Chris,
I hope that your week is going well!
I read the article below and I noticed that the city of Santee is looking for feedback from residents on the new estimated evacuation time calculations.

I27-2

Questions:

1. When/how will residents know if 2,949 or 3,008 homes will be built? Why would they built less than what they are approved to build. Was the calculation made with the max number of homes?

I27-3

2. Can they build more houses on any of the property Homefed owns as part of Fanita Ranch (the area described in the article)

I27-4

3. Were the estimates of less than two hours calculated with the neighborhood fully populated.
   a. How many cars was each household estimated to have?
   b. Was panic taken into effect?
   c. What is an accident or broken-down vehicle blocks fanita parkway

I27-5

4. Has the RV park evacuation been taken into account as part of this evacuation? Even if the farthest north corner is taken over people may choose to leave the RV park.

I27-6

5. How quickly will the fire department be able to address a fire in the farthest north corner and how will their responding to the area effect traffic?
6. When will the vote on this matter take place? Will it be open to the public?

I27-7

https://www.sandiegouniontribune.com/communities/east-county/story/2022-07-10/santee-makes-another-run-at-3-000-home-development-with-new-evacuation-report

I27-8

I send these questions so I can help justify this development for myself and my family since city council has already passed the version struck down for the court.
Best,
Benjamin Johnon
10532 Cadwell Road, Santee, CA 92071 Resident
Cell:510-552-7509
Sent from Mail for Windows

I27-1: The City acknowledges the comment as an introduction to comments that follow. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I27-2: The comment asks when/how residents will know if 2,949 or 3,008 homes will be built and whether the evacuation time calculations considered the maximum number of homes. The ultimate residential density of the proposed project depends on whether a school is constructed. If the school is built, 2,949 is the maximum allowable density of the proposed project. If no school is constructed, the maximum density is 3,008. In this instance, the area designated for a school could be developed with residential uses.

The evacuation modeling conducted by CR Associates (2022), Appendix D of the Wildland Fire Evacuation Plan (Appendix P2) assumed evacuation of the maximum density of 3,008 units in modeling evacuation of the full project (Scenarios 2 and 3). Refer to Table 1, Evacuating Vehicles, of Appendix D of the Wildland Fire Evacuation Plan (Appendix P2). The evacuation modeling also considered other, more probable evacuation scenarios

based on current phased or targeted evacuation practices. Refer to Appendix D of the Wildland Fire Evacuation Plan (Appendix P2) and Section 3.1.5 of the Fire Protection Plan (Appendix P1) for additional information.

I27-3: The comment asks whether more houses can be built on any of the property HomeFed owns on the project site. The potential residential density range for the proposed project is addressed in response to comment I27-2. No other residential density is proposed as part of the proposed project.

I27-4: The comment asks several questions concerning the estimated evacuation scenarios. As to the questions whether the neighborhood was considered "fully populated" and the number of cars per household considered, the evacuation scenarios conservatively considered a nighttime evacuation where all residents of the existing neighborhoods and proposed project were home. The number of evacuating vehicles was calculated by taking the total number of residential units and multiplying it by the average vehicle ownership (2.46 vehicles per household and 1.65 vehicles per Active Adult residential unit) in the area. Average vehicle ownership and residential unit calculations are summarized in Table 1, Evacuating Vehicles, of Appendix D of the Wildland Fire Evacuation Plan (Appendix P2) and provided in more detail in Attachment A of Appendix D of the Wildland Fire Evacuation Plan.

The comment next asks whether panic was taken into account in the evacuation modeling. The evacuation time modeling takes into account the stop-and-go nature of a mass evacuation to provide a worst-case scenario where everyone leaves at once and must yield to each other as they leave the evacuation area. Scenario 3 shows the times it would takes for all residents to take all of their vehicles and leave the evacuation area. This approach is more conservative than that shown in the Operational Area Emergency Operations Plan by the Unified San Diego County Emergency Services Organization and County of San Diego (Annex Q). Page 16 of Annex Q recommends determining evacuation times by assuming that the evacuating population would only take the necessary number of vehicles to leave the evacuation area. By contrast, the evacuation study assumes that the evacuating population would take every vehicle that they own, thus increasing the demand on the evacuation roadway network. This assumption accounts for "panic" type reactions by residents where they take more vehicles than necessary and slow an evacuation. The study does not take into account residents that may "panic" and leave the area prior to an evacuation order because, if such a case did occur, these early evacuees would have already arrived in a safe area by the time the evacuation order is issued.

The Wildland Fire Evacuation Plan (Appendix P2) further explains that generally speaking, while "citizen reactions

may vary during an evacuation event, . . . several studies indicate that orderly movement during wildfire and other emergencies is not typically unmanageable. Evacuation can be made even less problematic through diligent public education and emergency personnel training and familiarity" (Wildland Fire Evacuation Plan [Appendix P2], Section 6.5). Emergency responders will manage evacuations in compliance with the current County Annex Q (Evacuation) and the 2020 City of Santee Emergency Operations Plan, which provide a playbook to be used in the event of an emergency and incorporate several means of reducing fear and panic levels, including though providing effective notifications, directives, and information from credible sources, and providing coordinated assistance for individuals with special needs (Wildland Fire Evacuation Plan [Appendix P2], Section 6.5). Emergency personnel are further trained to address anxious and panicking residents during an evacuation scenario (Wildland Fire Evacuation Plan [Appendix P2], Section 6.5). The history of wildfire evacuations in San Diego County show evacuations have been safe and effective through implementing these plans.

The comment also asks whether accident/broken-down vehicles were taken into account in the evacuation modeling. During an evacuation, there are standard procedures for moving vehicles from evacuation routes and other actions that may be taken should such an

incident occur (Wildland Fire Evacuation Plan [Appendix P2], Sections 2 and 6.4). These procedures are practiced by law enforcement and fire personnel and in an evacuation event, may include pushing the vehicles to the side of the road so that lanes are free or towing them from the area, depending on time available. When traffic needs to be moved, emergency managers are adept at reacting to issues and using available resources to manage them. The Wildland Fire Evacuation Plan (Appendix P2) and CR Associates evacuation memorandum describe additional actions that may be used to expedite evacuation in such a circumstance, including "providing additional lead time in issuing evacuation orders, providing alternative signal control at downstream intersections, utilizing additional off-site routes or directing traffic to roadways with additional capacity, implementing contra-flow lanes, issuing 'shelter-in-place' orders when determined to be safer than evacuation," etc. (refer to Appendix D of the Wildland Fire Evacuation Plan [Appendix P2]).

The evacuation model considered nine evacuation scenarios (both mass and targeted evacuations) using the best available information, conservative assumptions, and the best available modeling technology to present reasonable vehicle travel time estimates based on the professional judgment of by CR Associates, Dudek, and fire operations experts with experience participating in evacuations in the City and San Diego County. The

evacuation model, however, is "necessarily limited in scope given the numerous variables inherent in a wildfire and evacuation event" and cannot consider every unknown or variable that may occur during an evacuation event (Wildland Fire Evacuation Plan [Appendix P2], Section 6.3 and Appendix D [describing model assumptions and limitations]).

The California Environmental Quality Act (CEQA) does not require the City to analyze every conceivable situation that may occur or engage in undue speculation, particularly in the context of an evacuation event that presents changeable and unpredictable scenarios (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors [2013] 216 Cal.App.4th 614, 639-640; San Joaquin Raptor Rescue Center v. County of Merced [2007] 149 Cal.App.4th 645, 666; Guidelines, § 15151). The Court of Appeal in League to Save Lake Tahoe Mountain etc. v. County of Placer (2022) 75 Cal.App.5th 63, 139–140, review denied (May 18, 2022), recently found the County of Placer was not required to consider various suggested "what if" evacuation scenarios, including a blocked evacuation route. The Court of Appeal analysis is informative here:

> It is difficult to predict how an actual evacuation will unfold and determine how a project may impact it. An evacuation is developed and directed in real time by those conducting it in response to the unique

> conditions before them. As a member of the County's office of emergency services explained to the planning commission, an evacuation is "always going to be difficult. There's no evacuation that ever goes textbook smooth. It's like running a play in football. You call the play and then you hope things go as best as they can. . . .
>
> CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive (Guidelines, § 15151)" (Kings County Farm Bureau v. City of Hanford, supra, 221 Cal.App.3d at p. 712). "An EIR is required to evaluate a particular environmental impact only to the extent it is 'reasonably feasible' to do so" (Rialto Citizens for Responsible Growth v. City of Rialto [2012] 208 Cal.App.4th 899, 937, quoting Guidelines, § 15151).

The evidence here indicates that the County did not abuse its discretion in determining its methodology for evaluating the impact to its evacuation plan or selecting the standard of significance and that substantial evidence supports the EIR's conclusion. The EIR's analysis provides a reasonable explanation under modeled circumstances of how the project will affect its residents' ability to evacuate and emergency responders' ability to access the area and the site.

Similarly here, the City has conservatively modeled nine reasonable evacuation scenarios and provided a reasonable explanation of how the proposed project will affect evacuation and emergency responders' ability to access the area and the site. Modeling additional "what if" scenarios would be speculative and is not required by CEQA. However, the evacuation "playbook" (Annex Q [Evacuation], 2020 City of Santee Emergency Operations Plan, Wildland Fire Evacuation Plan [Appendix P2]) will be followed by first responders in such scenarios to foster safe and effective evacuations.

I27-5: The comment asks whether RV park evacuation was considered in the evacuation time model. RV park evacuation has been contemplated within the proposed project's Wildland Fire Evacuation Plan (Appendix P2) and evacuation modeling conducted by CR Associates (2022), Appendix D of the Wildland Fire Evacuation Plan. As shown on Figures 2, 4A, and 5A, of the evacuation modeling, Santee Lake RV Resort and Santee Lakes Campgrounds land uses are included in the evacuation area. Refer to Appendix D of the Wildland Fire Evacuation Plan (Appendix P2).

I27-6: The comment asks how quickly the fire department will be able to address a fire in the northern corner of the site and how response will impact area traffic. The on-site fire station can respond to every unit on the proposed project

site in under 3 minutes 30 seconds travel time (3 minutes and 26 seconds to the most remote lot). Refer to Section 5.2 and Figure 11 of the Fire Protection Plan (Appendix P1). This would enable just under 2 minutes for dispatch and turnout and is considered to meet the 6-minute City's General Plan overall response time goal. This is considered to fall within a fire ignition's incipient moments when suppression and control is most likely. In addition, personnel and vehicles from the nearest off-site fire station would be able to travel to the project site within 8 minutes to assist with initial response. During a large wildfire, there would be several fire agencies providing resources, including CALFIRE with its full complement of ground and aerial attack capabilities. As to how fire response will impact area traffic, because wide, code-consistent roadways would be provided throughout Fanita Ranch, there would be no anticipated impacts from in-bound fire engines on any out-bound vehicle traffic. There are also many scenarios where this type of wildfire would not trigger additional outbound evacuation traffic, such as under calm and humid weather conditions (typical day).

I27-7: The comment asks when the vote on the proposed project will occur. The City Council will conduct a public hearing to consider the proposed project. Public notice will be provided in advance of the hearing in accordance with applicable legal requirements. This comment does not raise a significant environmental issue regarding the

adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I27-8: This comment concludes the comment letter by stating the reason for asking these questions. The City acknowledges the comment and notes it provides concluding remarks that do not raise new or additional environmental issues concerning the adequacy of the Recirculated Sections. Therefore, no further response is required.

Comment Letter I28: Debbie Mitton, July 11, 2022

I28

From: dmitton
To: Chris Jacobs
Subject: FW: Proposed Fanita Ranch Project in Santee
Date: Monday, July 11, 2022 10:23:21 AM

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: dmitton <dmitton@cox.net>
Date: 7/11/22 9:36 AM (GMT-08:00)
To: letters@sduniontribune.com, cjacobs@cityofsanteeca.gov
Subject: FW: Proposed Fanita Ranch Project in Santee

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: dmitton <dmitton@cox.net>
Date: 7/11/22 8:58 AM (GMT-08:00)
To: letters@sduniontribune.com
Subject: Proposed Fanita Ranch Project in Santee

I28-1 There's no problem with the 3000 home housing project in Santee as long as each house comes with its own well and everyone there teleports to work each day.

Debbie Mitton
11702 Rocoso Rd
Lakeside 92040
619 200-6743

Sent from my Verizon, Samsung Galaxy smartphone

I28-1: This comment states that every house should have its own well and everyone should teleport to the project site. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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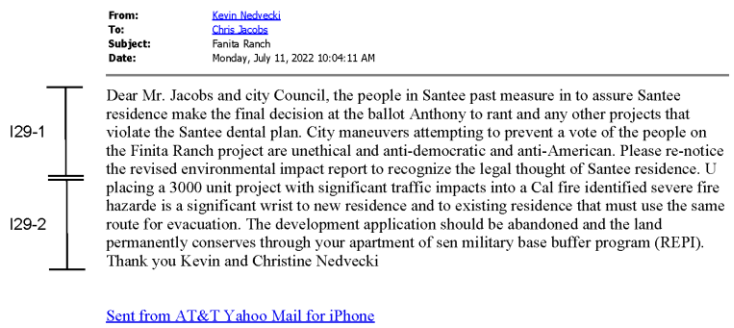
Comment Letter I29: Kevin and Christine Nedvecki, July 11, 2022

I29



From: Kevin Nedvecki
To: Chris Jacobs
Subject: Fanita Ranch
Date: Monday, July 11, 2022 10:04:11 AM

I29-1 I29-2

Dear Mr. Jacobs and city Council, the people in Santee past measure in to assure Santee residence make the final decision at the ballot Anthony to rant and any other projects that violate the Santee dental plan. City maneuvers attempting to prevent a vote of the people on the Finita Ranch project are unethical and anti-democratic and anti-American. Please re-notice the revised environmental impact report to recognize the legal thought of Santee residence. U placing a 3000 unit project with significant traffic impacts into a Cal fire identified severe fire hazarde is a significant wrist to new residence and to existing residence that must use the same route for evacuation. The development application should be abandoned and the land permanently conserves through your apartment of sen military base buffer program (REPI). Thank you Kevin and Christine Nedvecki

Sent from AT&T Yahoo Mail for iPhone

I29-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I29-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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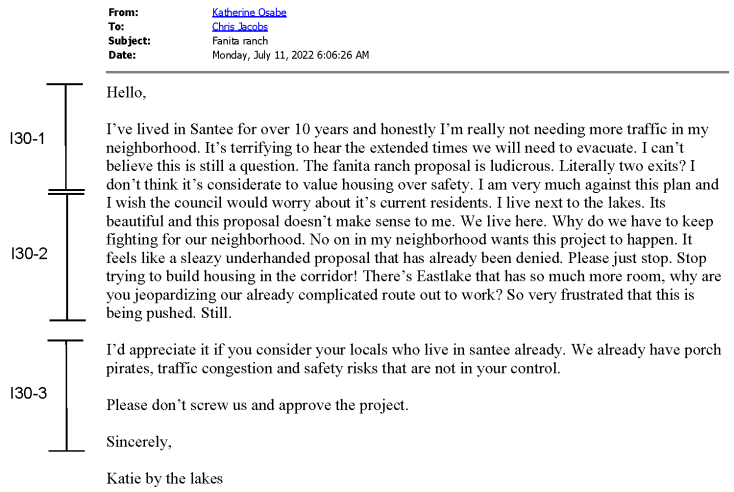
Comment Letter I30: Katherine Osabe, July 11, 2022

I30



From: Katherine Osabe
To: Chris Jacobs
Subject: Fanita ranch
Date: Monday, July 11, 2022 6:06:26 AM

I30-1

I30-2

I30-3

Hello,

I've lived in Santee for over 10 years and honestly I'm really not needing more traffic in my neighborhood. It's terrifying to hear the extended times we will need to evacuate. I can't believe this is still a question. The fanita ranch proposal is ludicrous. Literally two exits? I don't think it's considerate to value housing over safety. I am very much against this plan and I wish the council would worry about it's current residents. I live next to the lakes. Its beautiful and this proposal doesn't make sense to me. We live here. Why do we have to keep fighting for our neighborhood. No on in my neighborhood wants this project to happen. It feels like a sleazy underhanded proposal that has already been denied. Please just stop. Stop trying to build housing in the corridor! There's Eastlake that has so much more room, why are you jeopardizing our already complicated route out to work? So very frustrated that this is being pushed. Still.

I'd appreciate it if you consider your locals who live in santee already. We already have porch pirates, traffic congestion and safety risks that are not in your control.

Please don't screw us and approve the project.

Sincerely,

Katie by the lakes

I30-1: This commenter states that more traffic is not needed in their neighborhood and is concerned about extended evacuation times and two exits associated with the proposed project. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and the various scenarios for evacuation during a wildfire.

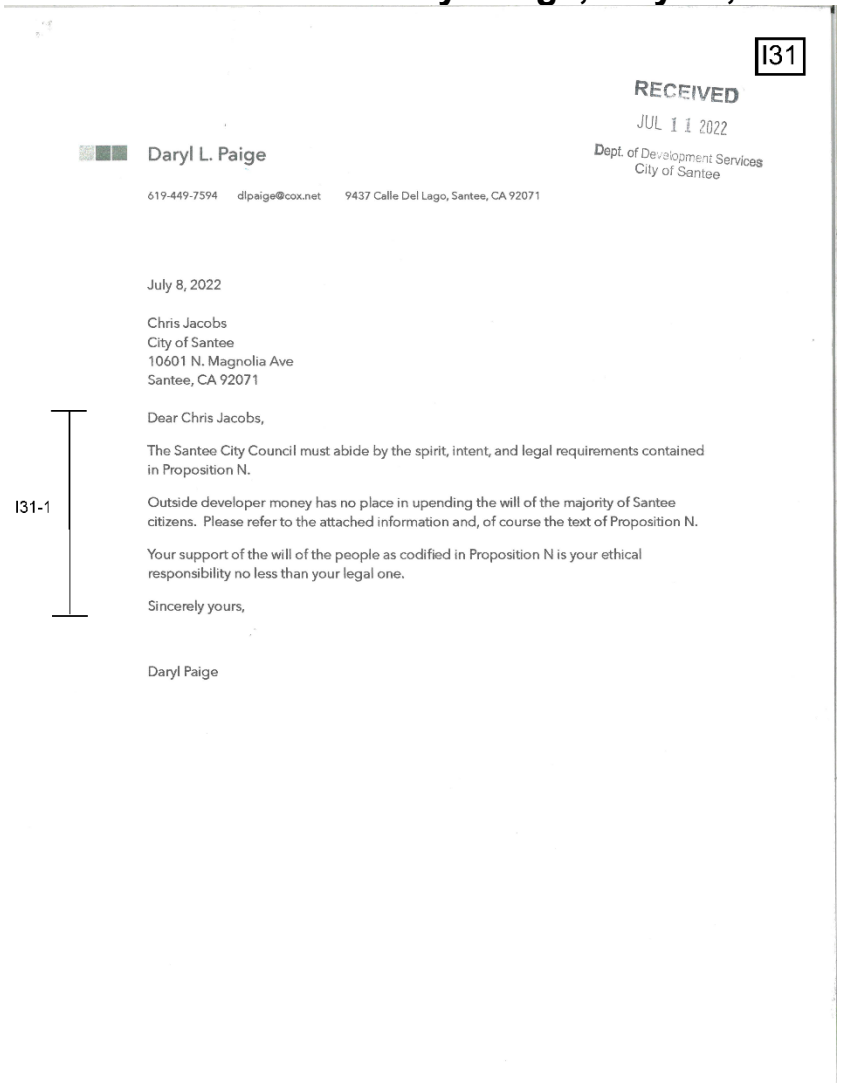
The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided on the traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I30-2: The comment states that no one in the neighborhood is in favor of the proposed project, suggests that Eastlake has more room, and states that the proposed project would jeopardize an already complicated route to work. This comment does not raise a significant environmental issue

regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I30-3: This comments states that locals who already live in Santee should be considered and mentions existing problems in the City. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I31: Daryl Paige, July 11, 2022



I31

RECEIVED
JUL 11 2022
Dept. of Development Services
City of Santee

Daryl L. Paige

619-449-7594 dlpaige@cox.net 9437 Calle Del Lago, Santee, CA 92071

July 8, 2022

Chris Jacobs
City of Santee
10601 N. Magnolia Ave
Santee, CA 92071

Dear Chris Jacobs,

The Santee City Council must abide by the spirit, intent, and legal requirements contained in Proposition N.

I31-1

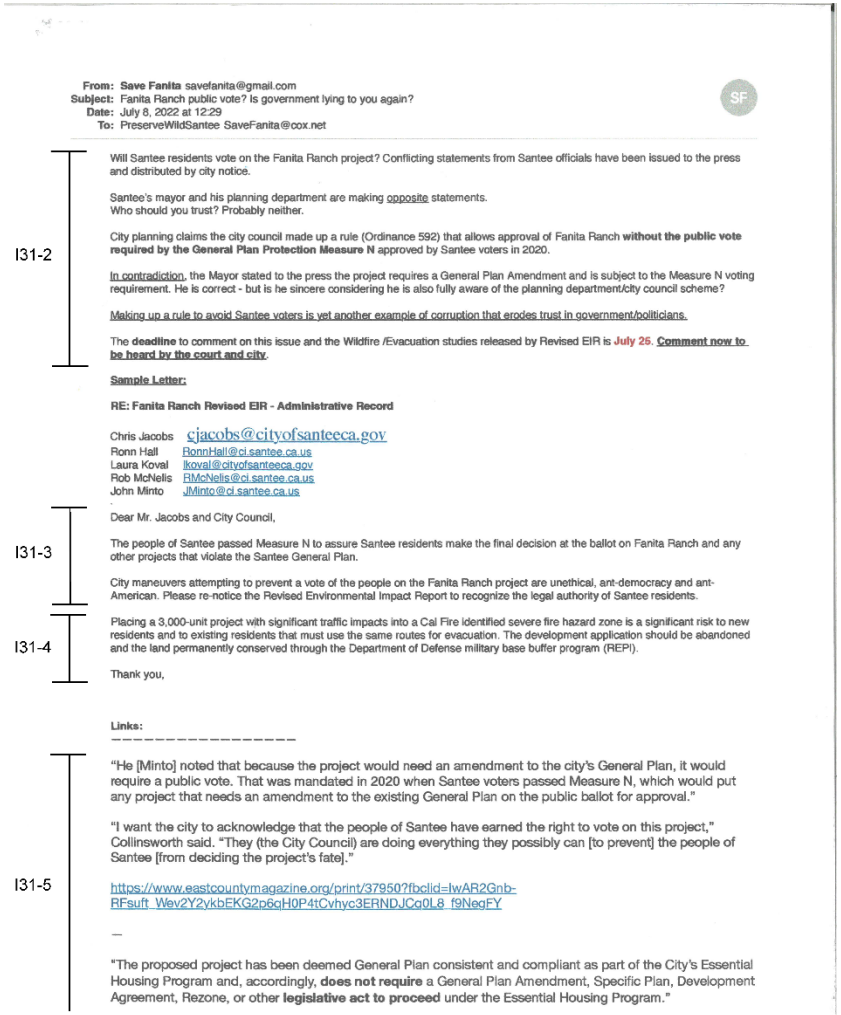
Outside developer money has no place in upending the will of the majority of Santee citizens. Please refer to the attached information and, of course the text of Proposition N.

Your support of the will of the people as codified in Proposition N is your ethical responsibility no less than your legal one.

Sincerely yours,

Daryl Paige

I31-1: This comment supports Proposition N for the proposed project. The City presumes that the commenter is referencing Measure N. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required. Responses to the attachment are provided below.



From: **Save Fanita** savefanita@gmail.com
Subject: Fanita Ranch public vote? Is government lying to you again?
Date: July 8, 2022 at 12:29
To: PreserveWildSantee SaveFanita@cox.net

I31-2

Will Santee residents vote on the Fanita Ranch project? Conflicting statements from Santee officials have been issued to the press and distributed by city notice.

Santee's mayor and his planning department are making opposite statements.
Who should you trust? Probably neither.

City planning claims the city council made up a rule (Ordinance 592) that allows approval of Fanita Ranch **without the public vote required by the General Plan Protection Measure N** approved by Santee voters in 2020.

In contradiction, the Mayor stated to the press the project requires a General Plan Amendment and is subject to the Measure N voting requirement. He is correct - but is he sincere considering he is also fully aware of the planning department/city council scheme?

Making up a rule to avoid Santee voters is yet another example of corruption that erodes trust in government/politicians.

The **deadline** to comment on this issue and the Wildfire /Evacuation studies released by Revised EIR is **July 25. Comment now to be heard by the court and city**.

Sample Letter:

RE: Fanita Ranch Revised EIR - Administrative Record

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall RonnHall@cl.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis RMcNelis@cl.santee.ca.us
John Minto JMinto@cl.santee.ca.us

I31-3

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I31-4

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Links:

I31-5

"He [Minto] noted that because the project would need an amendment to the city's General Plan, it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval."

"I want the city to acknowledge that the people of Santee have earned the right to vote on this project," Collinsworth said. "They (the City Council) are doing everything they possibly can [to prevent] the people of Santee [from deciding the project's fate]."

https://www.eastcountymagazine.org/print/37950?fbclid=IwAR2Gnb-RFsuft_Wev2Y2ykbEKG2p6qH0P4tCvhyc3ERNDJCg0L8_f9NegFY

—

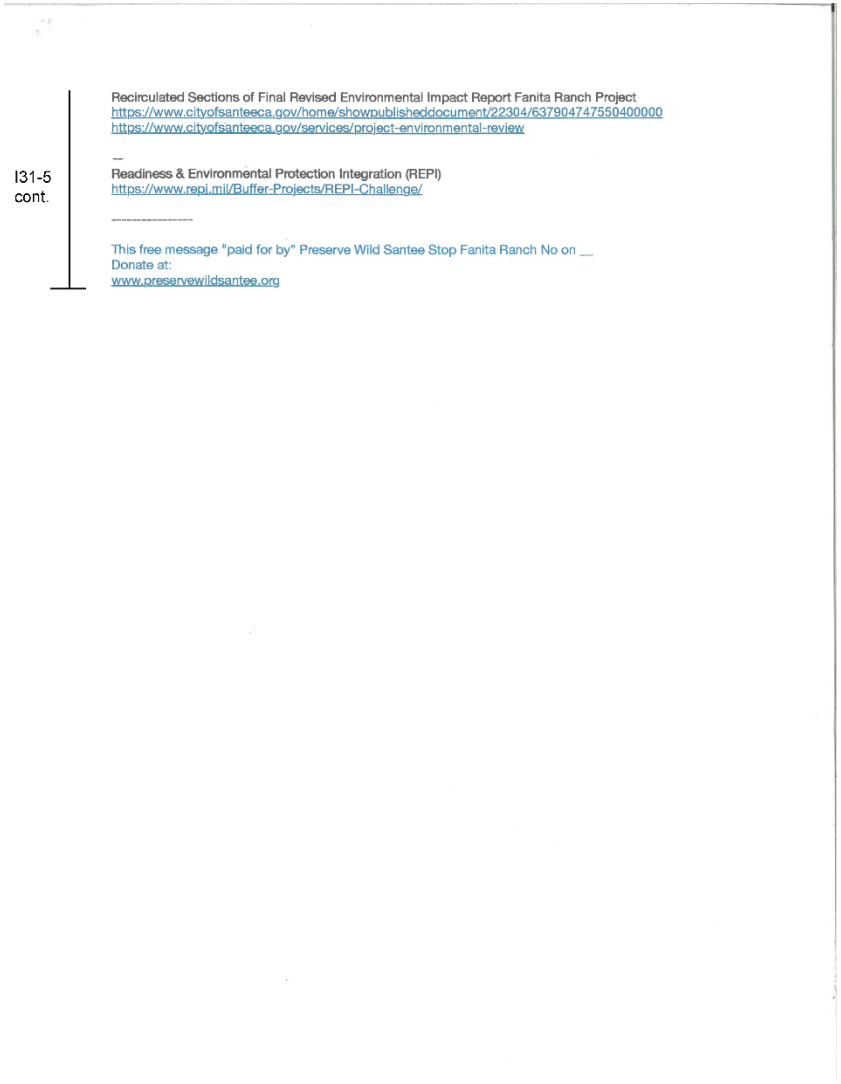
"The proposed project has been deemed General Plan consistent and compliant as part of the City's Essential Housing Program and, accordingly, **does not require** a General Plan Amendment, Specific Plan, Development Agreement, Rezone, or other **legislative act to proceed** under the Essential Housing Program."

I31-2: This comment is an email exchange between Save Fanita and Preserve Wild Santee concerning Ordinance 592 and the public vote via Measure N. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I31-3: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to response to comment I31-2.

I31-4: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

I31-5: This comment provides a quotation from a magazine stating that the City Mayor said that the proposed project would go to a vote and needs a General Plan Amendment and includes an excerpt from the Recirculated Sections



I31-5 cont.

Recirculated Sections of Final Revised Environmental Impact Report Fanita Ranch Project
https://www.cityofsanteeca.gov/home/showpublisheddocument/22304/637904747550400000
https://www.cityofsanteeca.gov/services/project-environmental-review

--

Readiness & Environmental Protection Integration (REPI)
https://www.repi.mil/Buffer-Projects/REPI-Challenge/

This free message "paid for by" Preserve Wild Santee Stop Fanita Ranch No on __
Donate at:
www.preservewildsantee.org

that states that the proposed project is consistent with the General Plan and provides a series of links. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

Daryl Paige
9457 Calle Del Lago
Santee, CA 92071

SAN DIEGO CA 920
9 JUL 2022 PM 2 L

FOREVER / USA

Chris Jacobs
City of Santee
10601 N. Magnolia Ave.
Santee CA 92071

92071-122201

Comment Letter I32: Ronda, July 11, 2022

I32

From: sdronda
To: Chris Jacobs
Subject: Fanita Ranch Proposal Fire Evacuation
Date: Monday, July 11, 2022 10:38:13 AM

Dear Chris Jacob's,

I32-1 I am responding to the revised Fire Evacuation Route for the proposed Fanita Ranch housing development.

As a home owner, tax payer and raised my family in the area, I am 100% against the Fanita Ranch housing for the following reasons:

I32-2 1. 1.53 hours to evacuate Fanita Ranch residents and the current Santee residents is far too long to safely evacuate. People will die in the event of serious fires.

2. Look at the People who died in Harmony Grove trying to evacuate or in Paradise, Ca.

I32-3 3. If a Fire happens during the fast moving Santa Ana winds, all of us will be at risk. All lives are priceless.

I32-4 4. I was denied AAA home owner insurance when I bought my cottage 2 blocks down from where I had raised my kids near Alponse and Prince Carlos. I had AAA for 20 years and they would NOT insure my cottage due to "High Fire Area". I lived farther away from the foothills.

I32-5 5. Climate change needs to be taken into account for Santee 2022 and forward. It has changed dramatically and has drastically changed for all of us.

I32-6 6. California is in a megadrought. Fire season used to be a season. Now it is year round.

I32-7 7. Water is required for life. Adding 3000 more homes X 4 people per home = 12,000 more people or more is negligent for Santee's viability.

I32-8 8. Add 6,000 more cars in Santee. Daily traffic congestion. At 8am, during a school day, it can take 15 minutes to drive down Magnolia Ave. Past Santana High School. Add a Fire Evacuation to that, which was not taken into account.

I32-9 9. Quality of life in Santee will diminish. Schools are already overcrowded. Traffic is already bad. Grocery shopping takes a long time. The closest hospital is Grossont Hospital to serve all of East County.

I32-10 10. Please listen to Santee residents and that we voted no on Fanita Ranch. The taxes generated will not offset safety and quality of life and water for those who live here.

Best Regards,
Ronda

I32-1: This comment state that the commenter is against the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I32-2: This comment states that 1.53 hours is too long to evacuate project residents and current City residents. In addition, this comment refers to fires in Harmony Grove and Paradise, California. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4b, which discusses the types of evacuations and evacuation modeling, and subsection 4e, which addresses significant differences between the fire environment in Northern California and project site. Previous wildfires in the County, including Harmony Grove, have caused large-scale evacuations that led to many "lessons learned" over the years that have prepared first responders for significant fire events.

I32-3: This comment states that if a fire happens during the Santa Ana winds, people will be at risk. The proposed project recognizes that fires would likely burn under Santa Ana wind conditions and has planned accordingly. As discussed in the Recirculated Section 4.18, Wildfire, the occurrence

of the Santa Ana winds, which are dry and much higher velocity, could facilitate fire spread. The proposed project's Fire Protection Plan contemplated these conditions and designed fire protection features that are site specific and focused on protecting the proposed project's buildings and residents while simultaneously minimizing the likelihood for on-site fire to burn off site into open space. For greater detail, please see Appendix P1.

In addition, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire.

I32-4: This comment states that the commenter was denied fire insurance due to the location of their cottage near Alphonse and Prince Carlos. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of California Environmental Quality Act (CEQA). The City will include the comment for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required because the comment does not raise an environmental issue.

I32-5: This comment states that climate change needs to be taken into account for Santee in 2022 and beyond. The Final Revised EIR for the Fanita Ranch Project was revised and

recirculated under CEQA. The Recirculated Sections were prepared to correct deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Greenhouse Gas Emissions, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding climate change associated with the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I32-6: This comment states that California is in a megadrought and that fire season used to be a season but is now year-round. The Recirculated Section 4.18, Wildfire, includes a discussion of fire history pertinent to the project site. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR.

I32-7: This comment states that water is required for life and adding 3,000 more homes is negligent for Santee's viability. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under CEQA. The Recirculated Sections were prepared to correct deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Utilities and Service Systems, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response

is provided regarding water supply associated with the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I32-8: This comment states that there is currently daily traffic congestion during school days and that adding fire evacuation to school traffic was not taken into account. With regard to the differences between daily traffic congestion and evacuation in the event of an emergency, such as wildfire, refer to responses to comments I2-1, I61-2, and O2-37. Please also refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under CEQA. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I32-9: This comment states that quality of life in Santee will be diminished and lists a number of current issues the commenter perceives to be problems, such as schools, traffic, grocery shopping, and medical services. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under CEQA. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Public Services and Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic, schools, or medical facilities serving the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR. Grocery shopping is not an environmental issue addressed by CEQA; therefore, no response is provided regarding that topic.

I32-10: This comment requests that the City listen to Santee residents who voted no on Fanita Ranch. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. Please refer to response to comment I32-1 in regard to safety, response to comment I32-9 in regard to quality of life, and response to comment I32-7 in regard to water supply.

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Comment Letter I33: Don Wood, July 11, 2022

I33

From: dwood8@cox.net
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Monday, July 11, 2022 12:59:04 PM

Dear Mr. Jacobs and Santee City Council,

I33-1 The people of Santee passed Measure N to assure Santee voters make the final decision at the ballot on Fanita Ranch and any other project proposals s that would violate the Santee General Plan.

City attempts to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I33-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone would create a major risk to new and existing residents that must use the same routes for evacuation. The Fanita Ranch project development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Don Wood
619-463-9035
Dwood8@cox.net

I33-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I33-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I34: Mary Chavez, July 12, 2022

I34

From: mary chavez
To: Chris Jacobs
Subject: Fanita Ranch
Date: Tuesday, July 12, 2022 11:32:45 AM

I hope my comment will not fall deaf ears. I have been a Santee resident and home owner for 61 years. I have never objected to any previous development plans, including Barrett Americans plans for Fanita Ranch.

I34-1 I do highly object to any development of Fanita Ranch without the residents of Santee voted approval. If approved by the voters, I will shut up and live with it.

If, by "hook or crook", this development proceeds without voter approval, I will become a very vocal and financial supporter to the unseating of current mayor and council.

Mary Chavez

I34-1: This commenter objects to any development of Fanita Ranch without the residents of Santee's voted approval. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I35: Gloria Gerak, July 12, 2022

I35

From: Gloria Gerak
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Tuesday, July 12, 2022 5:27:24 PM

Dear Mr. Jacobs and City Council:

I35-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other project that violate the Santee General Plan. Mr. Minto has noted that because the project would need an amendment to the City's General Plan, it would require a public vote. With that being said, this is just a waste of tax payers dollars and time and makes no sense. As you know, Santee voters passed Measure N in 2020 which would put any project that needs an amendment to the existing General Plan on the public ballot for approval. The Mayor is on record saying this so why this even a issue?

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-Democracy and anti-American. Please re-notice the Revised EIR to recognize the legal authority of Santee residents.

I35-2 Furthermore, placing a 3,000 unit project with traffic impacts into a CalFire identified severe fire hazard zone is a significant risk to new and existing residents that must use the same routes for escape from the fire. It is terrifying as I can tell you from 2004 and 2007. The development application should be tossed out and the land permanently conserved through the DOD Military Base Buffer Program (REPI).

Thanks and Be Well,

Gloria Valenti Gerak
Ronald T. Gerak
Alexander F. Gerak

9605 St. Andrews Drive
Santee, CA 92071
619.562.6622 Office & Fax
Mobile 619.300.6623

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I35-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. This comment states that Mayor Minto said the proposed project would go to a vote and needs a General Plan Amendment. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I35-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I36: Stephen Houlahan, July 12, 2022

From: Stephen Houlahan
To: Chris Jacobs
Cc: Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Tuesday, July 12, 2022 12:04:04 PM
Attachments: Fanita Ranch Revised EIR Comment Letter.docx

RE: Fanita Ranch Revised EIR - Administrative Record

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall ronnhall@ci.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis rmcnelis@ci.santee.ca.us
John Minto jminto@ci.santee.ca.us
Dustin Trotter dtrotter@cityofsanteeca.gov

Dear Mr. Jacobs and City Council,

I36-1 The Fanita Ranch Revised EIR should be rejected by the City of Santee and the Santee City Council. As a former Santee City Council Member having served from 2016 to 2020, I understand the extreme fire risk that exists in the area that the Fanita Ranch development would be placed. Allowing housing of 3,000-units in the Cal Fire identified severe fire hazard zone is reckless and would result in inevitable loss of property and life during the next wildfire that will burn the area proposed for development.

The Fanita Ranch Revised EIR again fails to sufficiently and adequately address the evacuation plan for proposed residents. Thousands of human beings will be placed at extreme risk for mortality and morbidity when they will be unable to evacuate during the inevitable wildfire that will occur. The Fanita Ranch Revised EIR proposes that future residents use the same routs for evacuation as that of existing residents of the City of Santee. During the 2003 Cedar Fire these evacuation routes were insufficient for existing community members.

I36-2 The Fanita Ranch Revised EIR proposes that residents "shelter-in-place" and await notification as to when it will be their turn to evacuate during a wildfire. It is not realistic nor feasible to expect the residents to allow themselves to linger in harm's way, risking their life and the life of family members, awaiting notification as to when they would be allowed to evacuate during a life or death emergency such as the events that transpired during the 2003 Cedar Fire. The 2003 Cedar Fire burned 273,246 acres of land including the totality of the property proposed for the Fanita Ranch development. The Cedar Fire's rapid growth was driven by the Santa Ana wind, causing the fire to spread at a rate of 3,600 acres per hour https://www.sandiego.gov/fire/about/majorfire/2003cedar . This rate would fully engulf the Fanita Ranch property within hours, far outpacing the evacuation rate proposed in the Fanita Ranch Revised EIR. For this reason, the City of Santee and the Santee City Council must reject this deadly proposal.

I36-3 Having lived in Santee my entire 49 years, one of my earliest memories as a child was being evacuated from Sycamore Canyon Elementary School in 1980's during one of the wildfires that burned the area proposed for the Fanita Ranch development. The event was traumatic

I36

I36-1: The comment expresses general opposition to the proposed project and the commenter's opinion regarding the fire risk to the project site. The commenter appears to mistake a wildland fire hazard designation with wildfire risk and potential for future wildfire loss of property. Although the proposed project is located in a very high fire hazard severity zone (VHFHSZ), it would have a significantly lower the potential of actual loss compared to other older communities that are also located in a VHFHSZ or even those located in a low fire hazard area. This is because there is a distinction between wildfire hazard zones (which the state categorizes) and risk to property (which the state does not quantify). A hazard determination is based on the potential fire behavior (i.e., flame length, crown fire occurrence, capacity to generate embers) in the predicted mature vegetation of the area. Risk, however, is the potential for structural loss from said fire. Thus, even if there is a potential low fire hazard in a given area (expected low flame lengths), a home might still be at high risk of ignition if the physical characteristics of the property would facilitate structural ignition (e.g., flammable vegetation next to a home with wood siding).

Conversely, and more applicable to the proposed project, a home might be built in what is currently designated as a high fire hazard severity zone due to potential exposure to

high flame lengths and ember generation but may actually be at low risk of ignition if the structure is built with ignition-resistant construction materials and adequate defensible space is provided around the home.

This is especially true in planned communities where fuel modification can be provided over large areas and includes a perimeter FMZ. Recent research indicates that scenarios with lower housing density, large lots (ranchettes), and larger numbers of small, isolated clusters of development resulted in higher predicted fire risk. By way of comparison to the low-density General Plan land use patterns or existing vegetative condition of the site, the proposed project land use density would not only be safer for the residents within the proposed project, but the proposed project itself would act as a large, irrigated fire break that would be expected to impede fire spread by inhibiting large-scale wildland fires from spreading across the project site and into existing nearby Santee neighborhoods.

I36-2: The comment inaccurately characterizes the Wildland Fire Evacuation Plan (Appendix P2) analysis and results and recited information relative to the 2003 Cedar Fire to suggest the analysis is inadequate. The comment provides unsubstantiated opinions of the commenter that are contrary to the extensive analysis provided in the Recirculated Sections but does not raise a specific issue related to the adequacy or accuracy of the analysis. The

Recirculated Sections considered data from the 2003 Cedar fire along with improvements in fire protection and evacuation planning that have since been put into practice (see Fire Protection Plan, Appendix P1, Sections 2.2.7, 3.1.5, 3.1.6, and 9.2.3). The Recirculated Sections explain that the evacuation routes and scenarios selected for this analysis were based on a comprehensive approach that included consultation with the Santee Fire Department, review of fire history, and review of Cedar Fire evacuations in Santee, fire behavior science, area topography, fuel types, and the evolved approach to evacuations, which is surgical instead of area wide (see Fire Protection Plan, Appendix P1, Section 3.1.5). This type of evacuation is consistent with the current County Emergency Operations Plan Annex Q and with management of recent San Diego County wildfires (for example, the 2017 Lilac Fire) where the phased/surgical evacuation practice has been implemented with great success. Under the most probable evacuation scenario, it would take existing land uses 19 minutes to evacuate the area (Appendix P2). Full evacuation of the proposed project would take under an hour (53 minutes) (Appendix P2). The commenter's unsubstantiated opinions are contradicted by the analysis in the Recirculated Sections. Please refer to Thematic Response – Fire and Evacuation, specifically subsections 4b and 4e, for comprehensive

I36-3 cont. and I remember vividly to this day the extreme danger my family and I experienced during that fire.
Stephen Houlahan RN, MSN, MBA

information regarding the types of wildfires that may occur, the evacuation approach, and the contingency option of on-site sheltering that may be employed in some wildfire scenarios.

I36-3: The comment provides a personal experience/memory of a wildfire evacuation. The City acknowledges the comment and notes it expresses the opinions of the commenter and does not raise an issue related to the adequacy of any specific section or analysis in the Recirculated Sections. The comment is consistent with the history of wildfire evacuations in San Diego County, which is that evacuations have been safe and effective. As the County has learned from fire events, improvements to the approach, technology, and resources available have resulted in more surgical evacuations within San Diego County that provide better notifications, disrupt fewer people, and focus on moving people who are or are projected to be in harm's way. This same approach incorporates consideration for community vulnerabilities, moving those at highest risk as a high priority. Evacuations are thereby able to occur more safely and efficiently. Refer to Section 3.1.5 of the Fire Protection Plan (Appendix P1) and the Wildland Fire Evacuation Plan (Appendix P2).

RE: Fanita Ranch Revised EIR - Administrative Record

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall ronnhall@ci.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis rmcnelis@ci.santee.ca.us
John Minto jminto@ci.santee.ca.us
Dustin Trotter dtrotter@cityofsanteeca.gov

Dear Mr. Jacobs and City Council,

The Fanita Ranch Revised EIR should be rejected by the City of Santee and the Santee City Council. As a former Santee City Council Member having served from 2016 to 2020, I understand the extreme fire risk that exists in the area that the Fanita Ranch development would be placed. Allowing housing of 3,000-units in the Cal Fire identified severe fire hazard zone is reckless and would result in inevitable loss of property and life during the next wildfire that will burn the area proposed for development.

The Fanita Ranch Revised EIR again fails to sufficiently and adequately address the evacuation plan for proposed residents. Thousands of human beings will be placed at extreme risk for mortality and morbidity when they will be unable to evacuate during the inevitable wildfire that will occur. The Fanita Ranch Revised EIR proposes that future residents use the same routs for evacuation as that of existing residents of the City of Santee. During the 2003 Cedar Fire these evacuation routes were insufficient for existing community members.

The Fanita Ranch Revised EIR proposes that residents "shelter-in-place" and await notification as to when it will be their turn to evacuate during a wildfire. It is not realistic nor feasible to expect the residents to allow themselves to linger in harm's way, risking their life and the life of family members, awaiting notification as to when they would be allowed to evacuate during a life or death emergency such as the events that transpired during the 2003 Cedar Fire. The 2003 Cedar Fire burned 273,246 acres of land including the totality of the property proposed for the Fanita Ranch development. The Cedar Fire's rapid growth was driven by the Santa Ana wind, causing the fire to spread at a rate of 3,600 acres per hour https://www.sandiego.gov/fire/about/majorfire/2003cedar . This rate would fully engulf the Fanita Ranch property within hours, far outpacing the evacuation rate proposed in the Fanita Ranch Revised EIR. For this reason, the City of Santee and the Santee City Council must reject this deadly proposal.

Having lived in Santee my entire 49 years, one of my earliest memories as a child was being evacuated from Sycamore Canyon Elementary School in 1980's during one of the wildfires that burned the area proposed for the Fanita Ranch development. The event was traumatic and I remember vividly to this day the extreme danger my family and I experienced during that fire.

Stephen Houlahan RN, MSN, MBA

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Comment Letter I37: William Marshall, July 12, 2022

I37

From: WILLIAM MARSHALL
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Say NO to Fanita Ranch
Date: Tuesday, July 12, 2022 9:17:08 AM

RE: Fanita Ranch Revised EIR - Administrative Record

I37-1

Dear Mr. Jacobs and Santee City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. We, the People, have voted and "shot down" the Fanita Ranch Project. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I37-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation.

I37-3

My family has already had our homeowner's insurance policy canceled due to the extreme fire danger in our area. And, with the increase in occupants due to Fanita Ranch, the traffic getting leaving Santee would be in grid lock; especially during a wildfire incident.

I37-4

The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

William P. Marshall

10167 Swanton Dr.

Santee

I37-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I37-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies

identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I37-3: This comment states concerns with their homeowners insurance being canceled due to fire danger in the area. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

This comment further discusses potential traffic conditions during a wildfire incident. Please refer to response to comment I37-2 regarding evacuation planning during a wildfire.

I37-4: This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer

program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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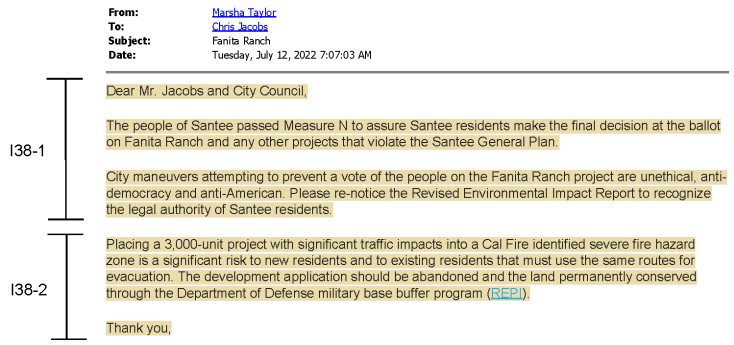
Comment Letter I38: Marsha Taylor, July 12, 2022

I38



From: Marsha Taylor
To: Chris Jacobs
Subject: Fanita Ranch
Date: Tuesday, July 12, 2022 7:07:03 AM

Dear Mr. Jacobs and City Council,

I38-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I38-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

I38-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I38-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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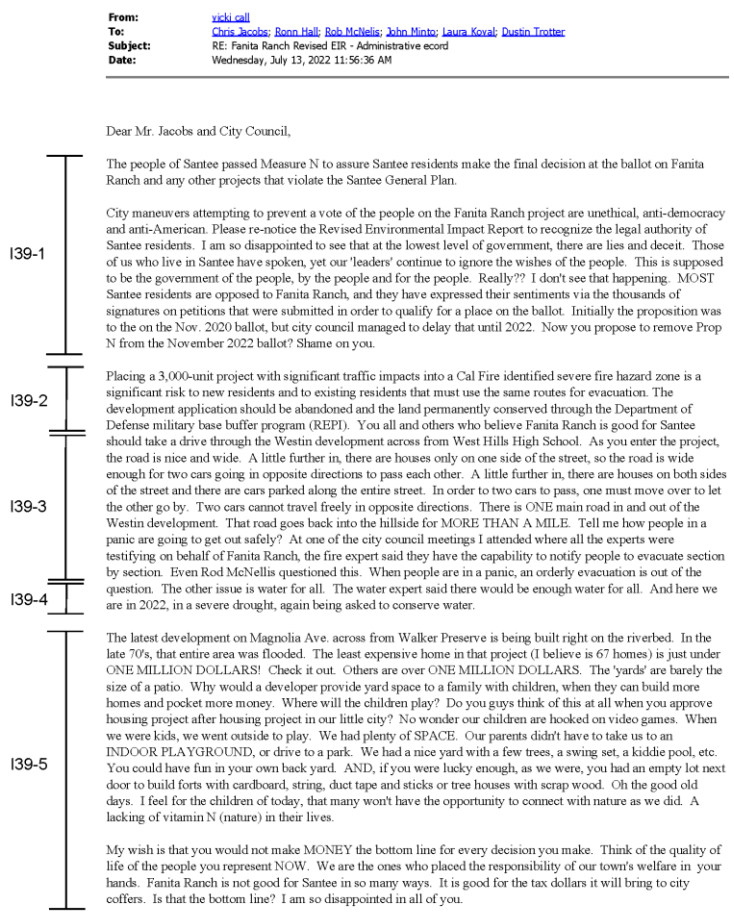
Comment Letter I39: Vicki Call, July 13, 2022

I39



From: vicki call
To: Chris Jacobs; Ronn Hall; Rob McNelis; John Minto; Laura Koval; Dustin Trotter
Subject: RE: Fanita Ranch Revised EIR - Administrative ecord
Date: Wednesday, July 13, 2022 11:56:36 AM

Dear Mr. Jacobs and City Council,

I39-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents. I am so disappointed to see that at the lowest level of government, there are lies and deceit. Those of us who live in Santee have spoken, yet our 'leaders' continue to ignore the wishes of the people. This is supposed to be the government of the people, by the people and for the people. Really?? I don't see that happening. MOST Santee residents are opposed to Fanita Ranch, and they have expressed their sentiments via the thousands of signatures on petitions that were submitted in order to qualify for a place on the ballot. Initially the proposition was to the on the Nov. 2020 ballot, but city council managed to delay that until 2022. Now you propose to remove Prop N from the November 2022 ballot? Shame on you.

I39-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI). You all and others who believe Fanita Ranch is good for Santee should take a drive through the Westin development across from West Hills High School. As you enter the project, the road is nice and wide. A little further in, there are houses only on one side of the street, so the road is wide enough for two cars going in opposite directions to pass each other. A little further in, there are houses on both sides of the street and there are cars parked along the entire street. In order to two cars to pass, one must move over to let the other go by. Two cars cannot travel freely in opposite directions. There is ONE main road in and out of the Westin development. That road goes back into the hillside for MORE THAN A MILE. Tell me how people in a panic are going to get out safely? At one of the city council meetings I attended where all the experts were testifying on behalf of Fanita Ranch, the fire expert said they have the capability to notify people to evacuate section by section. Even Rod McNellis questioned this. When people are in a panic, an orderly evacuation is out of the question. The other issue is water for all. The water expert said there would be enough water for all. And here we are in 2022, in a severe drought, again being asked to conserve water.

I39-3

I39-4

I39-5 The latest development on Magnolia Ave. across from Walker Preserve is being built right on the riverbed. In the late 70's, that entire area was flooded. The least expensive home in that project (I believe is 67 homes) is just under ONE MILLION DOLLARS! Check it out. Others are over ONE MILLION DOLLARS. The 'yards' are barely the size of a patio. Why would a developer provide yard space to a family with children, when they can build more homes and pocket more money. Where will the children play? Do you guys think of this at all when you approve housing project after housing project in our little city? No wonder our children are hooked on video games. When we were kids, we went outside to play. We had plenty of SPACE. Our parents didn't have to take us to an INDOOR PLAYGROUND, or drive to a park. We had a nice yard with a few trees, a swing set, a kiddie pool, etc. You could have fun in your own back yard. AND, if you were lucky enough, as we were, you had an empty lot next door to build forts with cardboard, string, duct tape and sticks or tree houses with scrap wood. Oh the good old days. I feel for the children of today, that many won't have the opportunity to connect with nature as we did. A lacking of vitamin N (nature) in their lives.

My wish is that you would not make MONEY the bottom line for every decision you make. Think of the quality of life of the people you represent NOW. We are the ones who placed the responsibility of our town's welfare in your hands. Fanita Ranch is not good for Santee in so many ways. It is good for the tax dollars it will bring to city coffers. Is that the bottom line? I am so disappointed in all of you.

I39-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I39-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents who must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those

portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Finally, this comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, he REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found to be deficient in the trial court's ruling, judgement and writ.

Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, is legally and socially infeasible and the alternative's analysis was deemed sufficient, this suggestion is rejected.

I39-3: This comment refers to the roadway design of the Westin development. The Westin development was approved by the City of San Diego, not the City of Santee. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. As to the proposed project, please see Recirculated Section 4.18.5.5, which discusses that proposed project roadways are designed to meet or exceed the County's Consolidated Fire Code requirements, including unobstructed travel lane widths consistent with the Fanita Ranch Development Plan standards, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, wide roadside fuel modification zones, and potential conflicts that could reduce the roadway efficiency are minimized, all of which would allow for smooth evacuations. Additionally, the streets would provide residents the option to evacuate from at least two points in two different directions from each neighborhood.

Thank you,

Vicki Call
10164 Peaceful Ct
Santee CA 92071

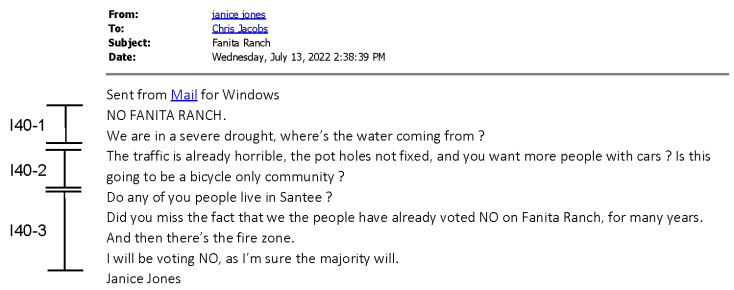
Further, the commenter questions the ability for targeted evacuation to occur. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire. Technological advancements in emergency notification capabilities has resulted in the ability of emergency managers to evacuate targeted areas in contrast to the mass evacuations that occurred during 2003 and 2007 wildfires in the region. Targeted evacuations allow better management of traffic congestion and focus on evacuating populations on a threat-level priority basis.

I39-4: This comment states that that water experts say there would be enough water for all, but we are in a severe drought and are currently being asked to conserve water. Please see response to comment I39-2. No response is provided regarding water supply since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I39-5: This comment discusses the latest residential development on Magnolia Avenue and changes between when the commenter was a child and now and states that children will not have the opportunity to connect with nature as people did in the past. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I40: Janice Jones, July 13, 2022

I40



From: janice jones
To: Chris Jacobs
Subject: Fanita Ranch
Date: Wednesday, July 13, 2022 2:38:39 PM

I40-1
I40-2
I40-3

Sent from Mail for Windows
NO FANITA RANCH.
We are in a severe drought, where's the water coming from ?
The traffic is already horrible, the pot holes not fixed, and you want more people with cars ? Is this going to be a bicycle only community ?
Do any of you people live in Santee ?
Did you miss the fact that we the people have already voted NO on Fanita Ranch, for many years.
And then there's the fire zone.
I will be voting NO, as I'm sure the majority will.
Janice Jones

I40-1: This comment states that we are in a severe drought and asks where the water for the proposed project is coming from. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Utilities and Service Systems, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding water supply for the proposed project because this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. Also refer to Thematic 1 – Recirculation and Scope of Review Claims.

I40-2: This comment pertains to traffic, additional people with cars, and bicycles. See response to comment I40-1. No response is provided regarding traffic or mobility impacts associated with implementation of the proposed project because this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. Please refer to Chapter 3, Project Description, of the Recirculated Sections of the Final Revised EIR for a description of the proposed project features, such as bicycle facilities.

I40-3: This comment states that the people of Santee have already voted no for the proposed project and questions whether "you people" live in Santee. Please refer to Thematic Response 2 – Referendum and Measure N Applicability. The comment also mentions the "fire zone." Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, which addresses the proposed project's location within a very high fire hazard severity zone and discusses issues regarding fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies.

Comment Letter I41: Jeanne Raimond, July 13, 2022

I41

From: JEANNE RAIMOND
To: Laura Koval; Ronn Hall; Rob McNelis; John Minto; Chris Jacobs; Dustin Trotter
Subject: Fanita Ranch
Date: Wednesday, July 13, 2022 9:51:51 PM

Dear Mr. Jacobs and City Council,

I41-1 I have lived in Santee for 50 years and part of what drew me here was the beautiful topography. I believe that where the Fanita Ranch development is planned is a mistake. It would fragment our natural border to the north and I would consider it an eyesore as well as unsafe. I know added taxes are desired as development proceeds unabated, but the infill already occurring throughout Santee is a much wiser choice.

I41-2 This proposed development of nearly 3000 units would severely affect traffic issues in our City as well as being a significant and severe fire risk zone as determined by Cal Fire.

I41-3 Measure N was passed by the voters to ensure that Santee voting residents be allowed to make the final decision on any projects that violate the City's General Plan, which Fanita Ranch definitely does.

Please consider abandoning the development application and seek to have that land permanently conserved through the Department of Defense military base buffer program or designate it as parkland. The people of Santee and the numerous endangered species would much appreciate this.

Thank you,

Jeanne Raimond

10828 Greencastle St.

Santee

I41-1: This comment provides an introductory comment to the letter and states that the proposed project would fragment the natural border to the north and be an eyesore. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Aesthetics and Biological Resources, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding potential fragmentation of biological resources or view impacts that would result from the implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I41-2: The comment states that the proposed project would severely affect traffic issues and be in a severe fire hazard zone. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

Please also refer to response to comment I41-1. No response is provided regarding traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I41-3: This comment states that Measure N was passed by the people to allow voters to make a final decision on projects that violate the General Plan. The comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). The comment is further concerned with the endangered species on the project site. With respect to Measure N and the General Plan consistency, please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings

to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, is legally and socially infeasible and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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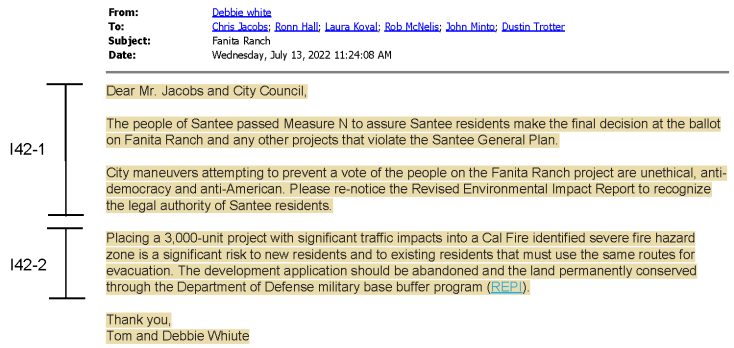
Comment Letter I42: Tom and Debbie White, July 13, 2022

I42



From: Debbie white
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch
Date: Wednesday, July 13, 2022 11:24:08 AM

I42-1

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I42-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,
Tom and Debbie Whiute

I42-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I42-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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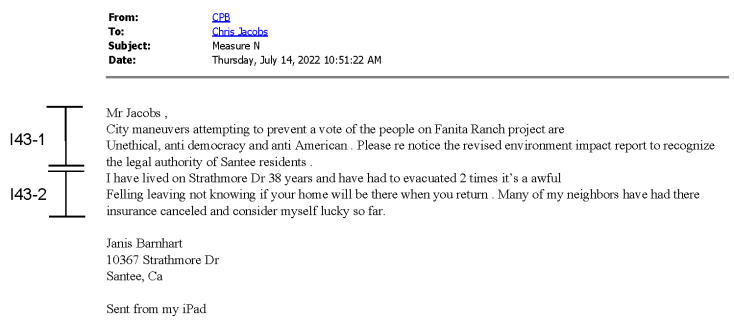
Comment Letter I43: Janis Barnhart, July 14, 2022

I43



From: CPB
To: Chris Jacobs
Subject: Measure N
Date: Thursday, July 14, 2022 10:51:22 AM

I43-1
I43-2

Mr Jacobs ,
City maneuvers attempting to prevent a vote of the people on Fanita Ranch project are
Unethical, anti democracy and anti American . Please re notice the revised environment impact report to recognize the legal authority of Santee residents .
I have lived on Strathmore Dr 38 years and have had to evacuated 2 times it's a awful
Felling leaving not knowing if your home will be there when you return . Many of my neighbors have had there insurance canceled and consider myself lucky so far.

Janis Barnhart
10367 Strathmore Dr
Santee, Ca

Sent from my iPad

I43-1: The comment states that the City is attempting to prevent a vote of the people of Santee and asserts that the EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I43-2: This comment states that the commenter has had to evacuate from their home two times as a result of a fire and mentions that some of their neighbors have had their insurance cancelled. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire. The comment regarding fire insurance raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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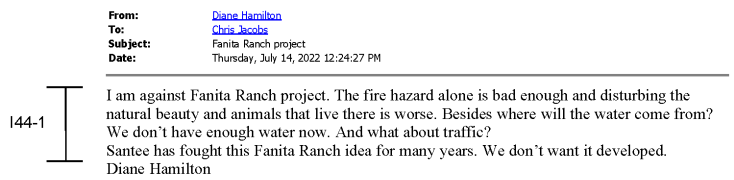
Comment Letter I44: Diane Hamilton, July 14, 2022



From: Diane Hamilton
To: Chris Jacobs
Subject: Fanita Ranch project
Date: Thursday, July 14, 2022 12:24:27 PM

I44-1

I am against Fanita Ranch project. The fire hazard alone is bad enough and disturbing the natural beauty and animals that live there is worse. Besides where will the water come from? We don't have enough water now. And what about traffic?
Santee has fought this Fanita Ranch idea for many years. We don't want it developed.
Diane Hamilton

I44

I44-1: This comment states that the commenter is against the proposed project due to the fire hazard, disturbance of natural beauty and animals, lack of water, and traffic. Please refer to Section 4.18, Wildfire, of the Recirculated Sections of the Final Revised EIR for a discussion on wildfire hazards and the proposed project. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Biological Resources, Utilities and Service Systems, and Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding comments on wildlife, water supply, and traffic impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I45: Mike Dolan, July 15, 2022

I45

From: Mike Dolan
To: Chris Jacobs
Subject: Developer"$ for few; traffic 4 all
Date: Friday, July 15, 2022 7:28:52 PM

I45-1

Mr. Jacob's, please understand residents' reasonable sentiment of/and towards the undesirable Fanita Ranch development.
Please be the morally right influence for the pursuit of happiness for the people of Santee, not merely a select few.
Thank you, Mike Dolan, Button St.

I45-1: This comment asks that the City understand the residents' sentiments toward the proposed project and consider the happiness of the people of Santee, not just a select few. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I46: Bill Barron, July 16, 2022

I46

From: Bill Barron
To: Chris Jacobs
Subject: No on that massive build out
Date: Saturday, July 16, 2022 9:45:19 PM

I46-1 Just stupid to add 3000 homes when we can't handle the electric needs, water needs and traffic we already have.

Sent from my iPhone

I46-1: This comment states that it is not advisable to add 3,000 homes when the City cannot handle the electricity needs, water needs, and traffic it already has. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Utilities and Service Systems and Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the electricity needs, water supply, or traffic associated with the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I47: Herman and Laurie Doidge, July 16, 2022

I47

From: Laurie
To: Chris Jacobs
Subject: Fajita Homes
Date: Saturday, July 16, 2022 3:15:24 PM

C. Jacobs
I47-1 I am writing to let you know I and my husband are 100% opposed to the Fanita ranch homes projects. No means no and the voters have said NO! This continued effort to build Fanita it's absolutely Ridiculous.
I47-2 I am a Santee resident and homeowner for over 25 years.
Fire safety should be the number one factor.
Regards,
Herman & Laurie Doidge
Sent from my iPhone

I47-1: The commenter is opposed to the proposed project and states that the voters have said no to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I47-2: This comment states that fire safety should be the number one factor. Please see Thematic Response 4 – Fire and Evacuation, specifically subsection 4d, which describes the proposed project's various fire safety features. The Recirculated Sections adequately address the issue of fire safety.

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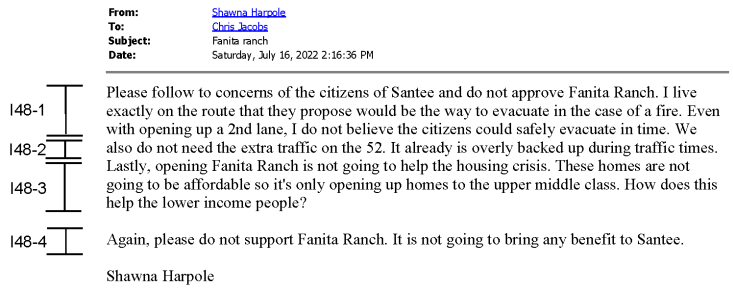
Comment Letter I48: Shawna Harpole, July 16, 2022

I48



From: Shawna Harpole
To: Chris Jacobs
Subject: Fanita ranch
Date: Saturday, July 16, 2022 2:16:36 PM

I48-1 I48-2 I48-3

Please follow to concerns of the citizens of Santee and do not approve Fanita Ranch. I live exactly on the route that they propose would be the way to evacuate in the case of a fire. Even with opening up a 2nd lane, I do not believe the citizens could safely evacuate in time. We also do not need the extra traffic on the 52. It already is overly backed up during traffic times. Lastly, opening Fanita Ranch is not going to help the housing crisis. These homes are not going to be affordable so it's only opening up homes to the upper middle class. How does this help the lower income people?

I48-4

Again, please do not support Fanita Ranch. It is not going to bring any benefit to Santee.

Shawna Harpole

I48-1: The comment asks that the City not approve the proposed project. The commenter lives on the route that the project is proposing to evacuate in the case of a fire and does not think they can safely evacuate. Please refer to Thematic Responses 4 – Fire and Evacuation, specifically subsections 4a and 4b, which address evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire. Therefore, the Recirculated Sections of the Final Revised EIR adequately address fire evacuation.

I48-2: The comment states that State Route 52 is currently congested and does not need the extra traffic. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic generation or road improvements that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

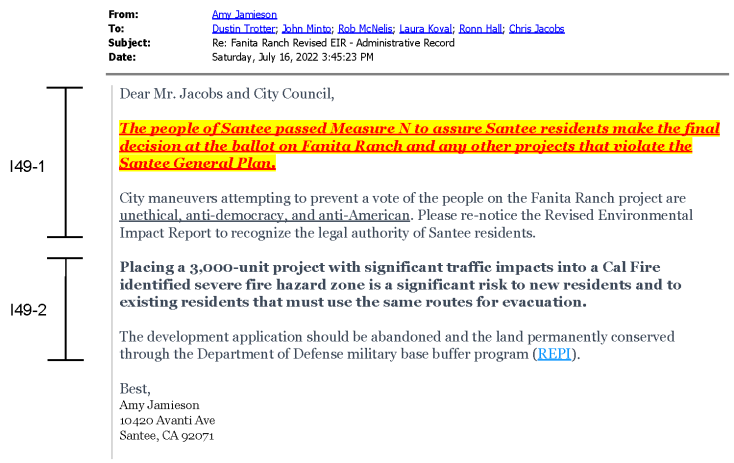
I48-3: This comment states that the proposed project would not help the housing crisis because it will not be affordable.

Please refer to Section 4.10, Land Use and Planning, specifically Section 4.10.5.2, which discusses how the proposed project would alleviate the City's housing crisis by providing a mix of residential and non-residential uses and a mix of housing types and sizes. A total of 2,949 housing units would be developed if the proposed project includes a school, or 3,008 units without a school, including 435 moderate-income units. The proposed project would also contribute up to $2 million for affordable housing.

I48-4: The comment asks that the City not support the proposed project because it would not bring any benefit. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I49: Amy Jamieson, July 16, 2022

I49



From: Amy Jamieson
To: Dustin Trotter; John Minto; Rob McNelis; Laura Koval; Ronn Hall; Chris Jacobs
Subject: Re: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 16, 2022 3:45:23 PM

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

I49-1

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy, and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation.

I49-2

The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Best,
Amy Jamieson
10420 Avanti Ave
Santee, CA 92071

I49-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I49-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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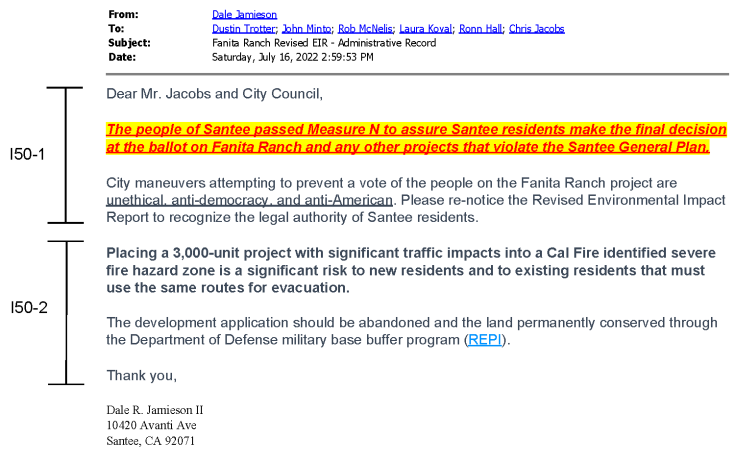
Comment Letter I50: Dale Jamieson II, July 16, 2022

I50



From: Dale Jamieson
To: Dustin Trotter; John Minto; Rob McNelis; Laura Koval; Ronn Hall; Chris Jacobs
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 16, 2022 2:59:53 PM

Dear Mr. Jacobs and City Council,

I50-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy, and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I50-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation.

The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Dale R. Jamieson II
10420 Avanti Ave
Santee, CA 92071

I50-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I50-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I51: Christina Dorminy, July 17, 2022

I51

From: Christina Dorminy
To: Chris Jacobs
Subject: Fanita Ranch project
Date: Sunday, July 17, 2022 9:28:06 AM

7/17/22

Good morning,

I51-1 I wanted to take a minute of your time to speak on my concerns regarding the construction plan of Fanita Ranch in Santee.

This builder wants to add 3000 new homes to a fire prone area without any reasonable way to evacuate. This builder and the city of Santee will greatly jeopardize the lives of many residents if this passes in its current state.

I51-2 If I understand correctly, under this new plan evacuation of 3000 residents would take 2 hours? Those 3000 then funnel into an even larger residential area (not sure how many residents are in the immediate surrounding areas). I imagine that would further increase evacuation times? Curious how long the residents of Paradise, CA took to get out. We see how fires can ravage an area extremely quick leaving residents helpless. I would hate to see that happen here. They need a better plan. More exits for emergency, maybe connect to Poway? Fires will only get worse in this state due to the constant severe drought. Notice how there is no longer a designated fire season. It's become year round. I've lived here for 40 years and have seen the way our surroundings have changed. Everything is so dry. The green hills in the early spring don't last long before turning brown. I remember living through the cedar fire. I had a friend whose family home was under evacuation. They were located next to city hall. I had to help.get them to safety as they were elderly and unable to drive. It was a terrifying experience.

I51-3 The city is obligated to put their current citizens needs and safety first. This new development does not fulfill those. Please do not allow this development to be built without an extensive evacuation plan in place.

Thank you for your time,

Christina Dorminy
Santee homeowner

Sent via the Samsung Galaxy S10, an AT&T 5G Evolution capable smartphone

I51-1: This comment is concerned about evacuation during a fire. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b which address evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire. The Recirculated Sections of the Revised Final EIR adequately address the issue of evacuation during a fire.

I51-2: The comment addresses evacuation timing during a wildfire, suggests more exits to the project site should be evaluated, and compares the project to the Paradise Fire, among other things. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4b which details the various evacuation modeling scenarios completed for the proposed project. The two-hour evacuation scenario mentioned in the comment refers to the evacuation of both the proposed project and existing land uses in the City located north of Mast Boulevard. Other scenarios are evaluated that would result in less time to evacuate, including the most probable evacuation scenario. Please also refer to subsection 4e which provides a comparison and denotes the differences between Northern California wildfires (including the Paradise Fire) with those that could occur on the project site.

I51-3: The comment states that the City should not allow this development to be built without an extensive evacuation plan in place. A detailed, project-specific evacuation plan for the project has been prepared and is provided in Appendix P2 (Wildland Fire Evacuation Plan) of the Recirculated Sections of the Final Revised EIR.

Comment Letter I52: Julia Macmillan, July 17, 2022

I52

From: Julia L. Mcmillan
To: Chris Jacobs
Subject: Comment on Fanita Ranch Revised Environmental Impact Report
Date: Sunday, July 17, 2022 7:15:28 PM

I52-1 Good afternoon! I understand that this is the appropriate venue for me to share concerns about the Fanita Ranch development per the revised environmental impact report, please let me know if I should contact anyone else.

We bought a house in Santee, next to the Santee Lakes, in November 2021. We were so happy to have found a safe, quiet place for our infant daughter to grow! A big appeal of the house we chose was that it was near the edge of Santee, meaning that there were many dead-end streets and there was no through traffic.

I52-2 We were very dismayed to learn of the proposed Fanita Ranch development, but then relieved to know that there was a referendum this coming November, which we hoped would result in a "no" vote. However, it is now my understanding that the referendum has not only been cancelled, but that it was never really going to stop the project anyway - I'm not sure how this is legal? And we will certainly be donating to efforts to combat this development.

I52-3 My largest concern is of course around fire safety and evacuations. You I'm sure you know, this whole area burned back in 2003 (Cedar Fire). With fire returns of between 1 and 25 years - again, citing this report - It is not a question of when, but if this happens again, and if it does we are setting ourselves up for another Paradise Fire, with no adequate plan for evacuation. I hope this is not what your administration wishes to be remembered for!

I52-4 Of course there are other concerns, like drought, noise, and congestion, but this fire danger is foremost in my mind.

I look forward to your response!

Warmly,
Julia McMillan

I52-1: The commenter states that they recently moved to the City. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

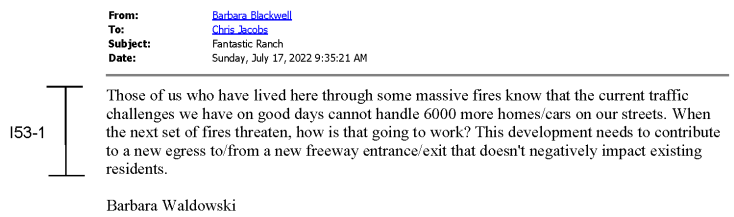
I52-2: The comment refers to a referendum for the Fanita Ranch Project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I52-3: This comment is concerned with fire safety and evacuations in consideration of the Cedar Fire and cites the Fire Protection Plan (Appendix P1), stating that fire returns to the area between 1 and 25 years. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire. Also, refer to subsection 4e, which provides a comparison of Northern California wildfires, including the Paradise Fire, and Southern California wildfires that could occur on

and around the project site. Therefore, the Recirculated Sections of the Final Revised EIR adequately address fire safety and evacuation during a wildfire event.

I52-4: This comment refers to other concerns with the proposed project including drought, noise, and traffic congestion. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Utilities and Service Systems, Noise, and Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding water supply, noise, or traffic impacts associated with implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

Comment Letter I53: Barbara Waldowski, July 17, 2022



From: Barbara Blackwell
To: Chris Jacobs
Subject: Fantastic Ranch
Date: Sunday, July 17, 2022 9:35:21 AM

I53-1

Those of us who have lived here through some massive fires know that the current traffic challenges we have on good days cannot handle 6000 more homes/cars on our streets. When the next set of fires threaten, how is that going to work? This development needs to contribute to a new egress to/from a new freeway entrance/exit that doesn't negatively impact existing residents.

Barbara Waldowski

I53

I53-1: This comment refers to living through fires and is concerned about evacuation associated with project traffic on City streets. The comment further states that there should be a new freeway entrance/exit that does not negatively impact residents. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and project site in the case of a wildfire without the need for a new freeway entrance/exit. Therefore, the Recirculated Sections of the Final Revised EIR adequately address fire evacuation on City streets with implementation of the proposed project.

Comment Letter I54: Marianne Lamoureux, July 18, 2022

I54

Marianne Lamoureux
10034 Carlton Hills Blvd.
Santee, CA 92071

RECEIVED
JUL 18 2022
CITY MANAGER'S OFFICE
City of Santee

July 11, 2022

Santee City Council
10601 Magnolia Ave.
Santee, CA 92071

RE: Fanita Ranch Revised EIR - Administrative Record

Dear Mr. Jacobs and City Council,

I54-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I54-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Marianne Lamoureux
A Santee Resident since 1987

I54-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I54-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I55: Iliana Sonntag, July 18, 2022

I55

From: Iliana Sonntag
To: Chris Jacobs
Subject: Fanita Ranch project
Date: Monday, July 18, 2022 1:25:29 PM

Dear Mr. Jacobs

I55-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I55-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program.

Thank you,

Iliana Sonntag
East Santee resident

I55-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I55-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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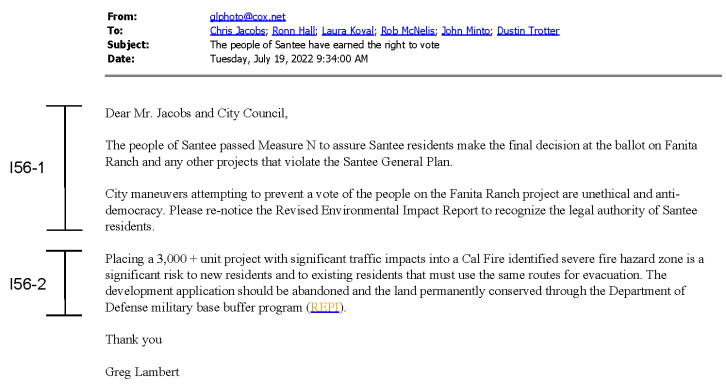
Comment Letter I56: Greg Lambert, July 19, 2022

I56



From: glphoto@cox.net
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: The people of Santee have earned the right to vote
Date: Tuesday, July 19, 2022 9:34:00 AM

Dear Mr. Jacobs and City Council,

I56-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical and anti-democracy. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I56-2

Placing a 3,000 + unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you

Greg Lambert

I56-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I56-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I57: Philip Londo, July 19, 2022

I57

From: philip londo
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Cc: Crystal Doerry
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Tuesday, July 19, 2022 7:21:48 AM

Dear Mr. Jacobs and City Council,

I57-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I57-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Philip M. Londo
Homeowner, 20 year santee resident, Fire Captain

I57-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I57-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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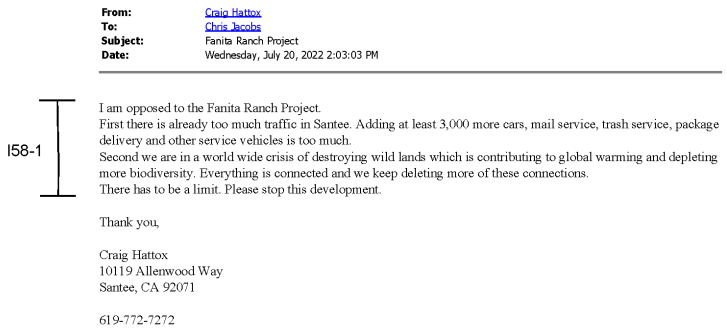
Comment Letter I58: Craig Hattox, July 20, 2022

I58



From: Craig Hattox
To: Chris Jacobs
Subject: Fanita Ranch Project
Date: Wednesday, July 20, 2022 2:03:03 PM

I58-1

I am opposed to the Fanita Ranch Project.
First there is already too much traffic in Santee. Adding at least 3,000 more cars, mail service, trash service, package delivery and other service vehicles is too much.
Second we are in a world wide crisis of destroying wild lands which is contributing to global warming and depleting more biodiversity. Everything is connected and we keep deleting more of these connections.
There has to be a limit. Please stop this development.

Thank you,

Craig Hattox
10119 Allenwood Way
Santee, CA 92071

619-772-7272

I58-1: This comment expresses the commenter's opposition to the proposed project, stating that there is too much traffic due to resident vehicles and service vehicles and that the proposed project would further destroy biodiversity and contribute to global warming. The Recirculated Sections of the Final Revised EIR were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, Biological Resources, and Greenhouse Gas Emissions, were not recirculated pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic, biodiversity, or climate change impacts that would result from the implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I59: Susan Mauri, July 20, 2022

I59

From: Sue Mauri
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Wednesday, July 20, 2022 10:22:04 AM

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

I59-1

Any maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American.

Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation.

I59-2

The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Susan Mauri
Santee resident since 1983

I59-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I59-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I60: Eric Morgan, July 20, 2022

I60

From: Eric Morgan
To: Chris Jacobs
Subject: Comment on Fanita Ranch Revised Environmental Impact Report
Date: Wednesday, July 20, 2022 10:08:20 AM

I60-1

I am a Santee resident, and I vote.

For forty years the City Council has been trying to stuff the Fanita Ranch project down the people's throat. Every time it has come up for a vote, it has been voted down.

I60-2

Why? The EIR spells it out: first and foremost, fire. We don't want 3,000 new homes crammed into a tinderbox. There is only one road out of this area, and it's surrounded by steep hills. Imagine a wildfire sweeping down on 3,000 households--we saw what happened to people stuck in this situation during the Paradise fire. Fire is a matter of when, not if. One day, you will have thousands of refugees on your hands when their houses burn to the ground.

I60-3

We don't want thousands of more cars making our bad traffic even worse. The 52 is already a parking lot. Mast Blvd is a mess during rush hour. Cramming that many houses in will make it unlivable.

And we don't want to lose a beautiful natural area for hiking and biking. Beautiful open spaces are a big part of what draws people to Santee. The trail that runs through the proposed development is extremely popular---people love it! Please don't bulldoze one of our few remaining nature reserves.

The proposed Fanita Ranch project is also going to be right next to a sewage treatment plant which already stinks during peak use. Imagine how much the residents will complain once they move in. Retrofitting it will cost Santee millions.

I60-4

Fanita Ranch is a dangerous and foolhardy project. Nobody here wants it. And we are paying attention.

Eric Morgan

I60-1: This comment states that the commenter is a City resident and that the Fanita Ranch Project has been repeatedly voted down. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I60-2: This comment states that residents do not want more homes in a fire-prone area with only one road out in the case of a wildfire. As discussed in the Final Revised EIR Recirculated Section 4.18, Wildfire, the project site would have two points of primary access for emergency response and evacuation. Depending on the nature of the emergency, future residents would exit to the south on Fanita Parkway or Cuyamaca Street. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several successful emergency evacuation scenarios for the City and proposed project in the case of a wildfire using specific routes, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

I60-3: This comment refers to the traffic on City streets and State Route 52, loss of natural areas for hiking and biking, and

smell from the sewage treatment plant. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, Recreational Resources, and Air Quality (odor), were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic, recreation, or odor impacts associated with the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I60-4: This comment states that the proposed project is dangerous and that nobody wants it. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I61: Claude and Julie Naggar, July 20, 2022

I61

From: julie naggar
To: Chris Jacobs
Subject: Fanita ranch
Date: Wednesday, July 20, 2022 2:06:15 PM

To whom it may concern,

I61-1 my husband and I have been residents of Santee for the past 18 years. Since that time we have witnessed multiple fires in San Diego that have caused immense destruction. One fire which had traveled from the north, ended up burning the entire hillside opposite West Hills high school.

I61-2 Traffic is at a standstill in the mornings on Mast Blvd and Mission Gorge sometimes during regular business hours and always during morning rush-hour. Can you imagine if there was an evacuation?

I61-3 We're currently in another drought and told to minimize our water usage. Who will support the demand for water of 3000 more homes and the fire department when it will be needed to save those homes during a fire.

I61-4 Our Sherriff's response time has slowed down due to an increase in crime and homelessness which has the sheriffs department receiving more calls then they can handle.

I61-5 Fanita Ranch is a bad idea for all of the residents of Santee and shows the transparency of absolute greed by those that want it here.

Claude and Julie Naggar
Sent from my iPhone

I61-1: This comment states that the commenter has been a City resident for many years and has witnessed multiple fires, specifically a fire near West Hills High School. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I61-2: This comment refers to traffic in the mornings on Mast Boulevard and Mission Gorge and asks about how it would be handled during an evacuation. This comment fails to distinguish everyday traffic, with actual or perceived congestion, with an emergency evacuation event, in which traffic flow is actively managed by emergency responders and law enforcement. Please refer to responses to comments I2-1 and O2-37. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4b, which discusses various evacuation modeling scenarios for the City and project site in the case of a wildfire. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not

recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I61-3: This comment mentions the current drought and questions water and fire personnel availability during a fire. As discussed in the Recirculated Section 4.18, Wildfire, the proposed project would provide a fully constructed and staffed permanent fire station. In addition, a temporary fire station site equipped with apparatus and personnel may be provided on site until a permanent fire station is complete. The Santee Fire Chief confirmed the addition of the new fire station, equipment, and staff on the project site would adequately serve the project site while maintaining current response standards. In addition, fire flow pressure would be required to be a minimum of 2,500 gallons per minute for 3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas. Concerning water availability and drought, please refer to response to comment I90-4 and Thematic Response 1 – Recirculation and Scope of Review Claims. The availability of water for firefighting is a high priority and is anticipated to continue to be a high priority. The region has a history of experiencing drought conditions, and the region's water purveyors, including Padre Dam Municipal Water District, confirm that water

supplies are adequate and they continue to invest in diversification of supply to ensure sustainability of the San Diego County water supply. In addition to hydrants, surface water sources are also available for firefighting, including ponds, pools, lakes, and ocean. With regard to the availability of emergency responders, including firefighters and law enforcement, refer to responses to comments O-52 and O-56. Also refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, concerning the coordination of personnel by emergency managers.

I61-4: This comment states that the Sheriff's response time has slowed due to an increase in crime and homelessness. Please see response to comment I61-2. No response is provided regarding the Sheriff's response times because the topic of public services is outside the scope of the Recirculated Sections of the Final Revised EIR.

I61-5: This comment states the commenter's opinion that the proposed project is a bad idea. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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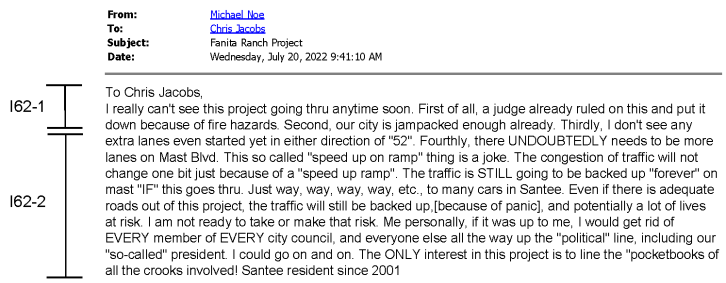
Comment Letter I62: Michael Noe, July 20, 2022

I62



From: Michael Noe
To: Chris Jacobs
Subject: Fanita Ranch Project
Date: Wednesday, July 20, 2022 9:41:10 AM

I62-1
I62-2

To Chris Jacobs,
I really can't see this project going thru anytime soon. First of all, a judge already ruled on this and put it down because of fire hazards. Second, our city is jampacked enough already. Thirdly, I don't see any extra lanes even started yet in either direction of "52". Fourthly, there UNDOUBTEDLY needs to be more lanes on Mast Blvd. This so called "speed up on ramp" thing is a joke. The congestion of traffic will not change one bit just because of a "speed up ramp". The traffic is STILL going to be backed up "forever" on mast "IF" this goes thru. Just way, way, way, way, etc., to many cars in Santee. Even if there is adequate roads out of this project, the traffic will still be backed up,[because of panic], and potentially a lot of lives at risk. I am not ready to take or make that risk. Me personally, if it was up to me, I would get rid of EVERY member of EVERY city council, and everyone else all the way up the "political" line, including our "so-called" president. I could go on and on. The ONLY interest in this project is to line the "pocketbooks of all the crooks involved! Santee resident since 2001

I62-1: This comment states that the commenter does not think the proposed project will be approved since a judge ruled on it due to fire hazards. Please refer to Chapter 0, Preface, of the Recirculated Sections for an explanation of the inadequacies found by the Superior Court and how the Recirculated Sections respond to the court's order. With regard to fire hazard, please refer to Recirculated Section 4.18, Wildfire, specifically prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Fire hazards are now adequately addressed.

I62-2: This comment refers to existing traffic congestion on City streets and State Route 52 and asks for more improvements to these roadways. It also provides an opinion about elected officials. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

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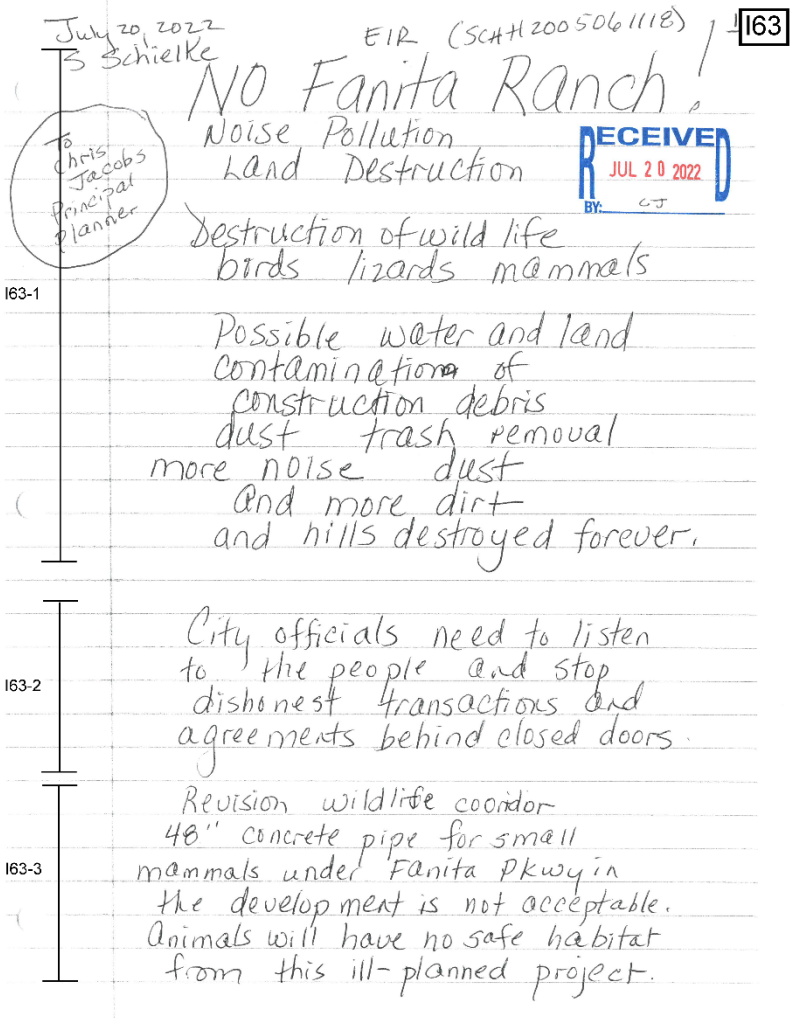
Comment Letter I63: Sandy Schielke, July 20, 2022


July 20, 2022
S Schielke

EIR (SCH#2005061118)

I63

NO Fanita Ranch!

To Chris Jacobs Principal Planner

Noise Pollution
Land Destruction

RECEIVED
JUL 20 2022
BY: CJ

Destruction of wild life
birds lizards mammals

I63-1

Possible water and land
contamination of
construction debris
dust trash removal
more noise dust
and more dirt
and hills destroyed forever.

City officials need to listen
to the people and stop
dishonest transactions and
agreements behind closed doors.

I63-2

Revision wildlife coordor
48" concrete pipe for small
mammals under Fanita Pkwy in
the development is not acceptable.
Animals will have no safe habitat
from this ill-planned project.

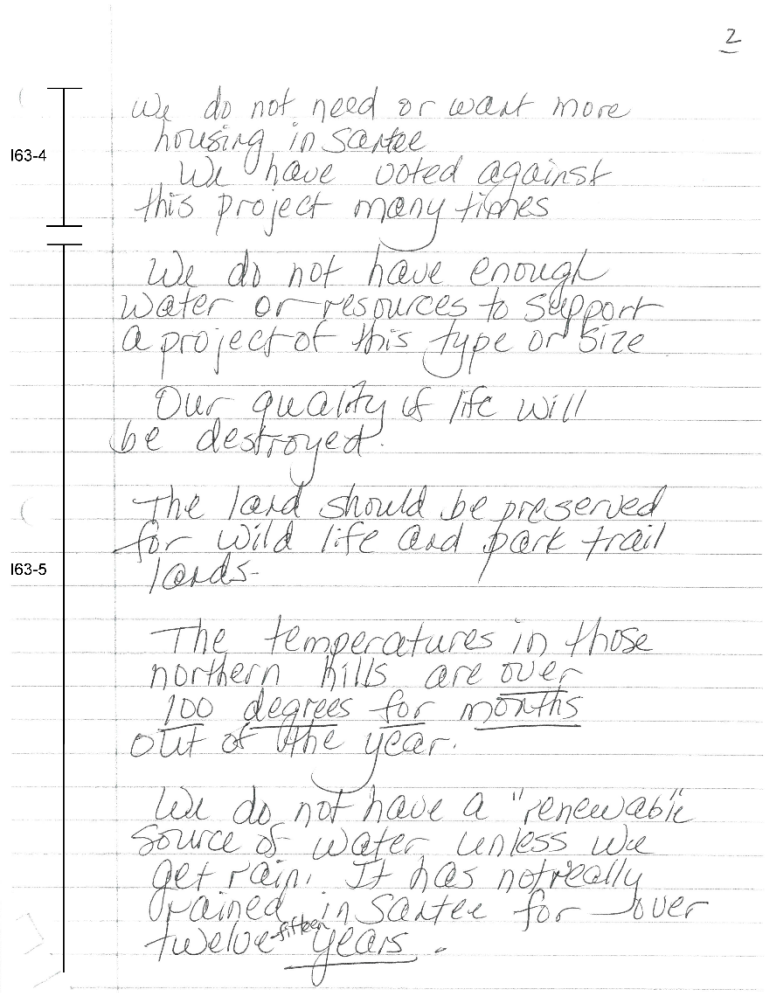
I63-3

I63-1: This comment opposes the proposed project and indicates that it would result in noise pollution, land destruction, destruction of wildlife, possible water and land contamination from construction activities, and destruction of the hills. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Aesthetics, Air Quality, Biological Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's potential visual, air quality, biological (wildlife), grading and land alternation, hazardous materials, water quality, or noise impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I63-2: This comment provides the commenter's opinion regarding City transactions and states that City officials need to listen to the people. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the

Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

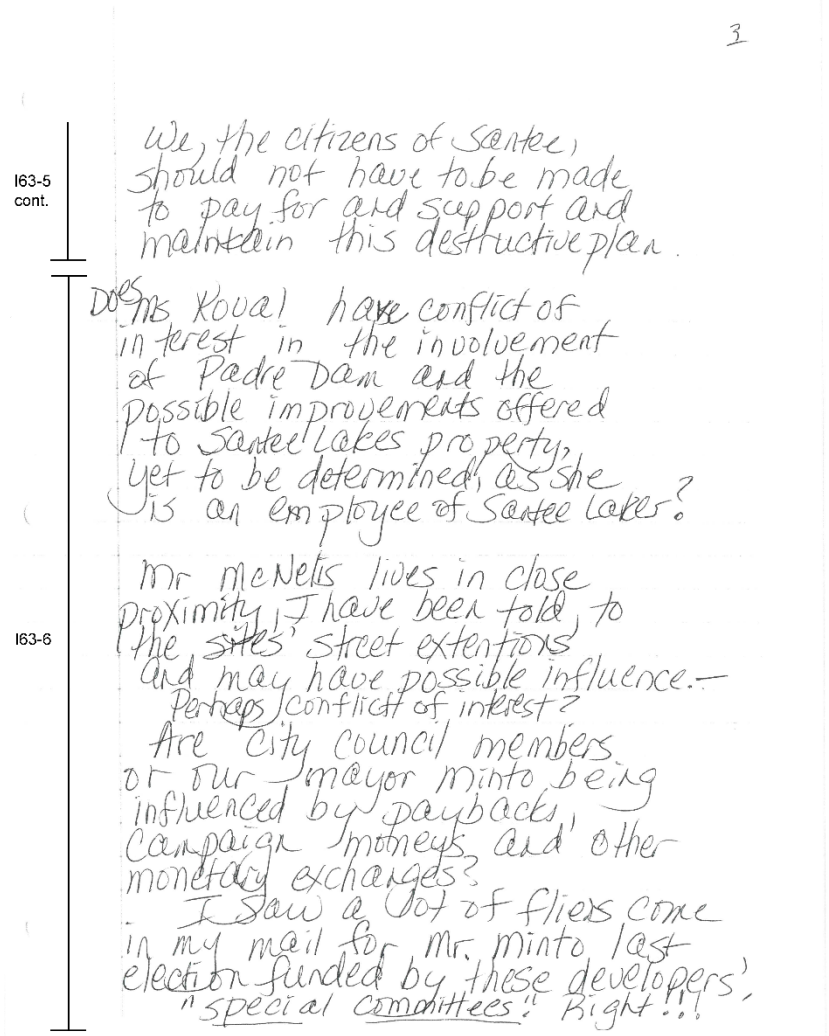
I63-3: This comment pertains to the design of the project's wildlife corridors. See response to comment I63-1. No response is provided regarding the proposed project's wildlife corridor design since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.



I63-4: This comment states the commenter's opinion regarding the need for housing in the City and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I63-5: This comment questions the availability of water resources to support the proposed project, encourages the land to be preserved for wildlife and park trail lands, and suggests that the residents of Santee would have to pay for and maintain the proposed project.

With regard to water supply or other resources necessary to support the project, the Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Aesthetics, Air Quality, Biological Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise, among others, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's potential effects on water supply or other resources since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR. Although the topic also is outside the scope of the Recirculated Sections of the Final Revised EIR,



3

I63-5 cont.

We, the citizens of Santee, should not have to be made to pay for and support and maintain this destructive plan.

Does Ms Koval have conflict of interest in the involvement of Padre Dam and the possible improvements offered to Santee Lakes property, yet to be determined, as she is an employee of Santee Lakes?

I63-6

Mr McNelis lives in close proximity, I have been told, to the sites' street extentions and may have possible influence.— Perhaps conflict of interest?

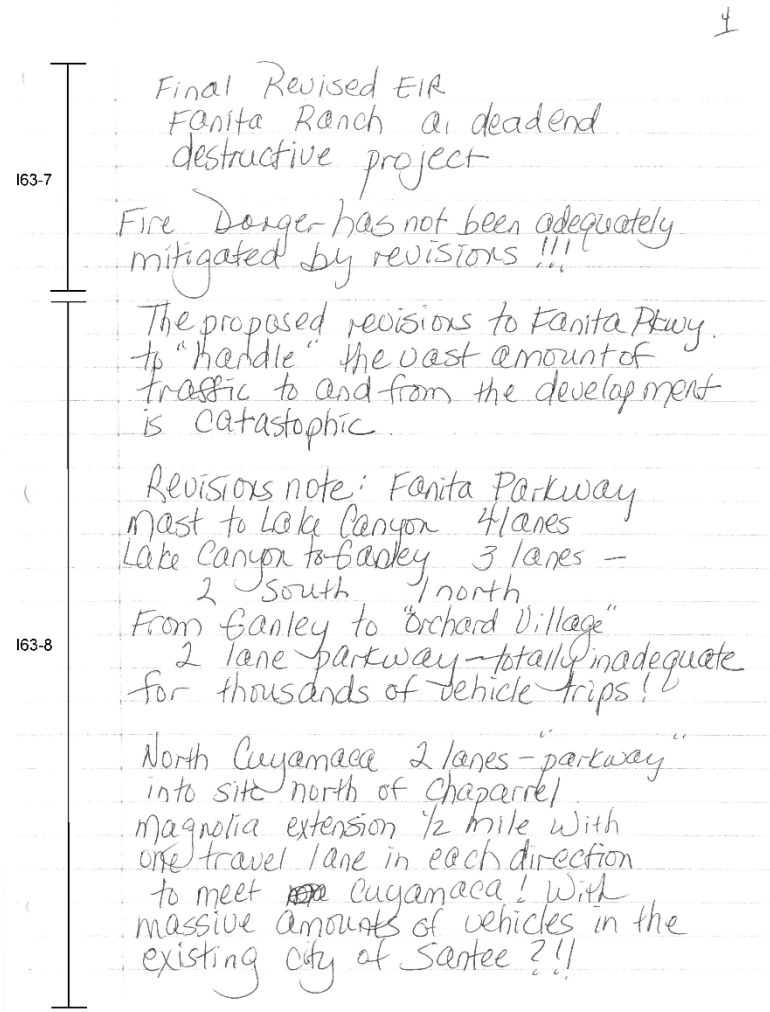
Are City Council members or our Mayor Minto being influenced by paybacks, campaign moneys, and other monetary exchanges?

I saw a lot of fliers come in my mail for Mr. Minto last election funded by these developers' "special committees" Right!!!

responsibility for the cost and maintenance of the project lies with the developer, and is addressed in the project Conditions of Approval.

With regard to the comment's preference for preservation of the project site as open space for wildlife and park trails, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement and writ. Therefore, no response is provided regarding additional alternatives to the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I63-6: This comment suggests that Santee City Council members may have a conflict of interest in relation to the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.



4

I63-7

Final Revised EIR
Fanita Ranch a dead end
destructive project

Fire Danger has not been adequately
mitigated by revisions !!!

The proposed revisions to Fanita Pkwy.
to "handle" the vast amount of
traffic to and from the development
is catastophic.

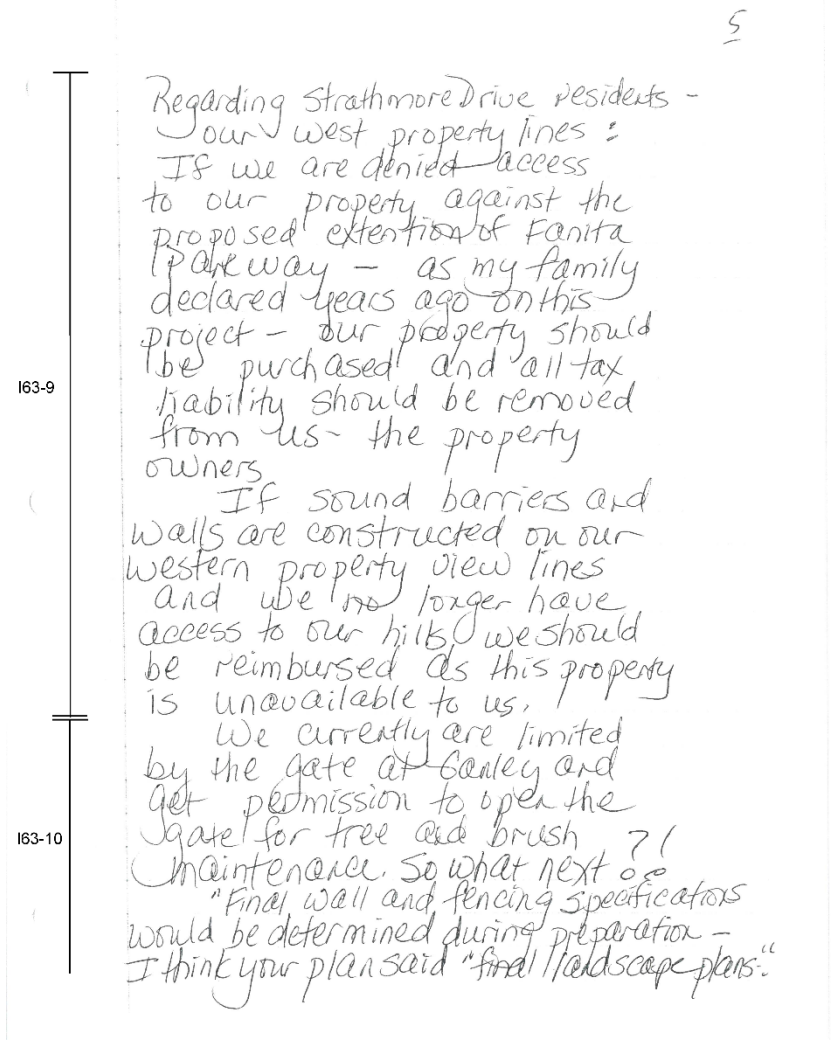
I63-8

Revisions note: Fanita Parkway
Mast to Lake Canyon 4 lanes
Lake Canyon to Gooley 3 lanes –
2 South 1 north
From Gooley to "Orchard Village"
2 lane parkway – totally inadequate
for thousands of vehicle trips!

North Cuyamaca 2 lanes – parkway"
into site north of Chaparrel
Magnolia extension ½ mile with
one travel lane in each direction
to meet Cuyamaca! With
massive amounts of vehicles in the
existing city of Santee ?!!

I63-7: This comment states that the fire danger has not been adequately mitigated by the project revisions. Recirculated Section 4.18, Wildfire, evaluated the project's impacts and concluded that the proposed project would not result in significant impacts related to wildfire, thus no mitigation measures are required. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk, and subsection 4d, which discusses fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies.

I63-8: This comment refers to proposed roadway improvements associated with the proposed project. See response to comment I63-1. No response is provided regarding the proposed project's traffic impacts or proposed improvements since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.



5

Regarding Strathmore Drive residents -
our west property lines:
If we are denied access
to our property against the
proposed extention of Fanita
Parkway - as my family
declared years ago on this
project - our progerty should
be purchased and all tax
liability should be removed
from us - the property
owners.
If sound barriers and
walls are constructed on our
western property view lines
and we no longer have
access to our hills we should
be reimbursed as this property
is unavailable to us.
We currently are limited
by the gate at Ganley and
get permission to open the
gate for tree and brush ?/
maintenance. So what next on
"Final wall and fencing specifications
would be determined during preparation -
I think your plan said "final landscape plans."

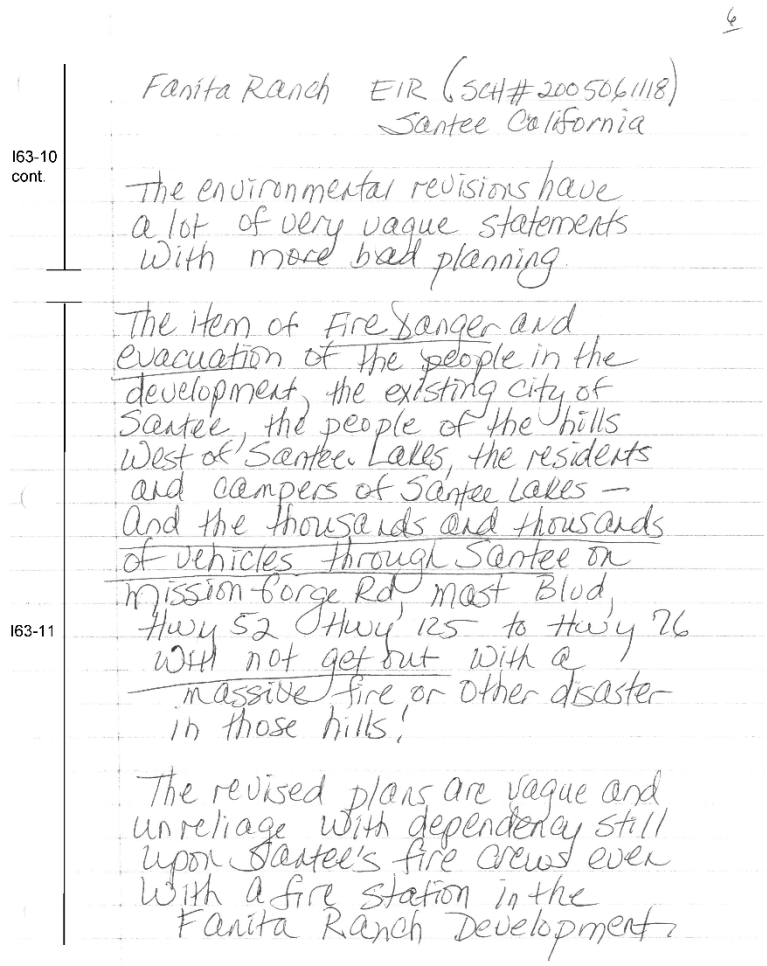
I63-9

I63-10

I63-9: The comment addresses potential traffic, visual, and noise impacts on the existing residential properties that abut the extension of Fanita Ranch Parkway. See response to comment I63-1. No response is provided regarding the project's proposed traffic improvements, noise, or aesthetics since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I63-10: This comment refers to maintenance of an individual property outside the Fanita Ranch project site and cites the commenter's opinion that the environmental revisions contain vague statements. The statement partially cited by the commenter is found in Section 3, Project Description, specifically Section 3.9.4. Section 3, Project Description, was only recirculated with regard to Section 3.12. Therefore, no response is provided regarding the timing of the final wall and fencing specifications since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

As addressed in the Fire Protection Plan (Appendix P1), the proposed project would be responsible for maintaining fuel management zones on the project site. It is unclear from the comment what property is being accessed by the commenter through a gate on Ganley Road for maintenance purposes. To the extent the property at issue is within the project site, maintenance would be the responsibility of the Fanita homeowners association. To



6

Fanita Ranch EIR (SCH#2005061118)
Santee California

I63-10 cont.

The environmental revisions have a lot of very vague statements with more bad planning.

The item of Fire Danger and evacuation of the people in the development, the existing city of Santee, the people of the hills West of Santee Lakes, the residents and campers of Santee Lakes — And the thousands and thousands of vehicles through Santee on Mission Gorge Rd, Mast Blvd, Hwy 52 Hwy 125 to Hwy 76 will not get out with a massive fire or other disaster in those hills!

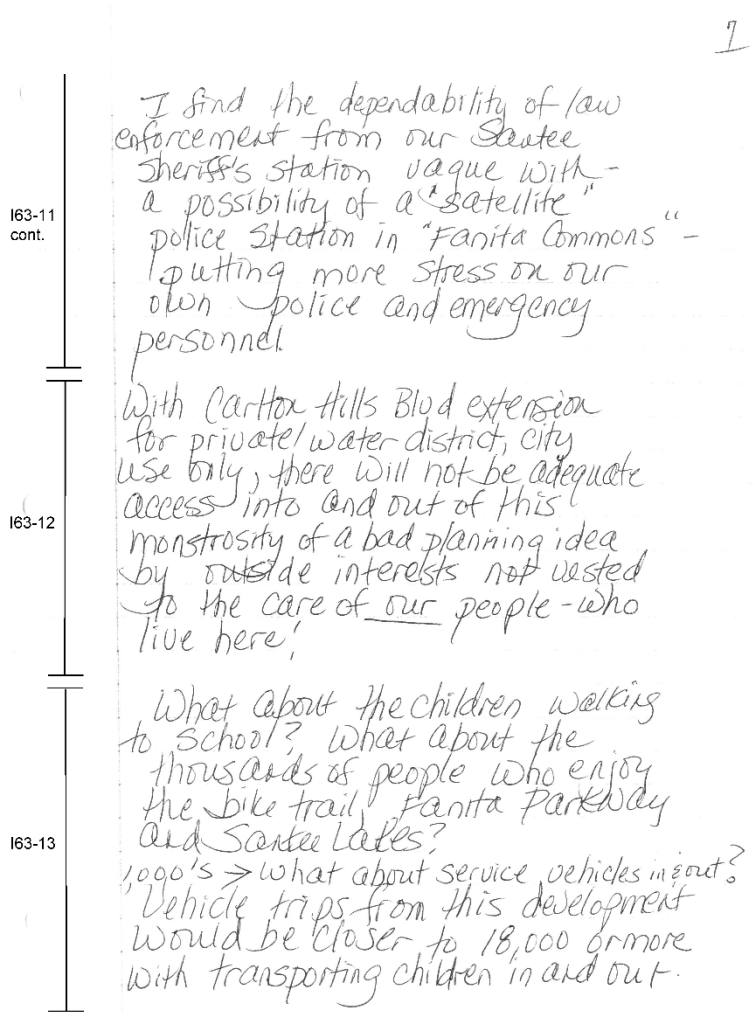
I63-11

The revised plans are vague and unreliage with dependency still upon Santee's fire crews even with a fire station in the Fanita Ranch Development.

the extent that the commenter is entering the project site with permission in order to maintain trees and brush located on land owned by the commenter, that is a private matter between adjacent landowners and outside the scope of the Recirculated Sections. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I63-11: The comment is concerned with evacuation during a wildfire. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The comment also states that the revised plans are vague and unreliable with dependency on City fire and police crews, which puts more stress on police and emergency personnel. The commenter does not provide details on why they think the revised plans are vague. Refer to Thematic Response 4 – Fire and Evacuation, specifically section 4a, for a discussion of how emergency responders coordinate in the event of a wildfire emergency. With regard to the comment that the project will stress police



I63-11 cont.

I63-12

I63-13

1

I find the dependability of law enforcement from our Santee Sheriff's station vague with a possibility of a "satellite" police station in "Fanita Commons" - putting more stress on our own police and emergency personnel.

With Carlton Hills Blvd extension for private/water district, city use only, there will not be adequate access into and out of this monstrosity of a bad planning idea by outside interests not vested to the care of our people - who live here!

What about the children walking to school? What about the thousands of people who enjoy the bike trail, Fanita Parkway and Santee Lakes?
1000's → what about service vehicles in/out?
Vehicle trips from this development would be closer to 18,000 or more with transporting children in and out.

and emergency personnel, the Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Public Services, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided on the need for new or altered government services for fire and police since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I63-12: The comment states that with the extension of Carlton Hills Boulevard there will not be adequate access into and out of the project site. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including the Transportation topic of site access, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding comments pertaining to general site access since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I63-13: The comment refers to children walking to school, the on-site bicycle trail, and local amenities and mentions service vehicles and school trips regarding vehicle trips in and out of the proposed development. See response to comment I63-1. No response is provided regarding pedestrian,

bicycle, or traffic improvements or impacts that would result from the implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I64: Bob and Arla Axtman, July 21, 2022

I64

From: ROBERT AXTMAN
To: Chris Jacobs
Cc: Ikovai@cityofsanteeca.gov; Rob McNelis; John Minto; Dustin Trotter; Ronn Hall
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Thursday, July 21, 2022 9:41:46 AM

I64-1

PLEASE re-notice the Revised Environmental Impact Record to recognize the legal authority of Santee Residents.

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on

Fanita Ranch and any other projects that violate the Santee General Plan !

I64-2

Placing 3,000 units with significant traffic impacts into a *Cal Fire identified fire hazard zone* is a hugh risk to new

and existing residents that *must use the same routes for evacuation !*

I64-3

Will San DIego County have the WATER SUPPLY for 3,000 more units - where will the water come from ?

Last we heard, California is in a drought situation !

I64-4

PLEASE abandon the development application and conserve the land permanently through the Dept of

Defense Military base buffer program.

Thank You,

Bob & Arla Axtman

I64-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I64-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental

Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding potential traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I64-3: This comment is concerned with San Diego County's water supply to accommodate the proposed project during a drought. Please refer to response to comment I64-2. No response is provided regarding water supply since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I64-4: This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not

be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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Comment Letter I65: Kari Cureton, July 21, 2022

I65

From: Kari Coker
To: Chris Jacobs
Subject: Fanita Ranch Project
Date: Thursday, July 21, 2022 10:01:45 PM

Mr. Jacobs,

I65-1 I am a home owner in Santee and have lived here for almost seven years. We live near the proposed Fanita Ranch project area. During these seven years we have seen tremendous growth in our town - from residential to commercial build.

I65-2 We don't need more traffic, more large housing developments and more habitat destroyed. We watched a fire burn in those hills two years ago during the pandemic from my daughter's window. Those hills are a fire hazard and from what I have read in the reports, there are only two roads that can be used as escape routes for all of people who would be living there. Plus add in the traffic from all of the emergency vehicles.

We both know that this isn't a safe project that the community wants. Nobody wants this project except the developer who is hell bent on building this project. Please listen to the community - WE DON'T WANT THE FANITA RANCH PROJECT BUILT.

I65-3 I pay my taxes, I run a business here, my kids go to school here and I invest in our community everyday. Our community voice must be heard and our votes will be tallied in November. I hope that the planning of this community takes into consideration what its residents want and need - and it's definitely not this project.

Thank you for your time,

Kari Cureton

I65-1: The comment is an introductory statement and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I65-2: This comment states that the City does not need additional traffic, large housing developments, or destruction of habitat. In addition, the comment states that the hills are a fire hazard and that there are only two roads for evacuation.

Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4a, which discusses factors affecting evacuation timing and routes; subsection 4b, which discusses the types of evacuations and various scenarios for evacuation during a wildfire; and subsection 4c, which explains that placing a development in a high fire severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation and Biological Resources, were not recirculated pursuant to CEQA

Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic and biological habitat impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I65-3: This comment states opposition for the proposed project. The comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I66: Mary Hyder, July 21, 2022

I66

From: Mary Hyder
To: Chris Jacobs
Cc: Dustin Trotter; John Minto; City Clerk
Subject: Fanita Ranch EIR public comment
Date: Thursday, July 21, 2022 6:02:50 AM

Dear City of Santee,

I66-1 It still does not appear that fire and traffic concerns are mitigated in this latest EIR. The City Council had rubber stamped this project without fully regarding the unmitigated fire and traffic issues in the earlier EIR. Since that rubber stamp event was halted, the voters of the City of Santee want a vote on the project and since this updated EIR does not in my opinion positively mitigate fire and traffic issues, the City should not proceed any further until the Fanita Ranch project is brought to a vote to the citizens of the City.

I66-2 While I may not like it, I will accept Fanita Ranch going forward only in the event the project is brought to a vote and a majority of citizens of the City of Santee vote (knowing the fire and traffic issues are not mitigated) to proceed with Fanita Ranch.

Thank you,

Mary Hyder
375 Whispering Willow Dr
Santee, CA 92071

Mary Hyder
1.619.723.0916
Sent from my iPhone...sorry for any typos

I66-1: This comment refers to traffic and fire issues associated with the proposed project and supports a public vote on the proposed project.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Please refer to Recirculated Section 4.18, Wildfire, which concluded that the proposed project would not result in significant impacts related to wildfire. Please refer to Thematic Response 4 – Fire and Evacuation, which addresses evacuation planning, types of evacuations and evacuation modeling, fire ignition and risk, fire protection and safety, and Northern California wildfires.

Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure

N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I66-2: This comment supports a public vote on the proposed project. Please refer to response to comment I66-1. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I67: Tiffany Keller, July 21, 2022

I67

From: Tiffany Keller
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR – Administrative Record
Date: Thursday, July 21, 2022 11:42:11 AM

Dear Mr. Jacobs and City Council Members,

I67-1

As a resident of Santee, I'm extremely concerned with the proposed building of the Fanita Ranch project in the foothills north of Mast Blvd. From what I understand, it could take several hours to try to evacuate during a fire and we have been categorized as a severe fire hazard zone by CalFire. Placing an additional 3,000 units north of us with only two exits is negligent at best.

I67-2

Also, why would all traffic to this 10,000 + person neighborhood be routed through only two entrances /exits. There are a number of streets that simply end with chain link fence in the area that could accommodate additional exits routes during an emergency. I understand the need to preserve the environment but driving all that traffic primarily by Santee Lakes (as that will be the nearest entry / exit way for future inhabitants) will disrupt the campgrounds and nearby neighbors significantly. Part of the reason we love that neighborhood is because of the tranquility. If you expand Fanita Parkway and drive all that traffic between us and the campgrounds, you will dramatically change the nature of our neighborhood.

I67-3

Lastly, the people of Santee passed Measure N to assure Santee residents that they get to make the final decision at the ballot on the Fanita Ranch project or any other city projects that violate the Santee General Plan. To attempt to prevent residents the chance to vote on these issues by not publicizing the discussions is both unethical and anti-democratic. I hope the council and city planning office will reconsider our options for moving forward with any plans that affect the residents already living in Santee.

I67-4

For all the concerns listed above, I beg you to reconsider the planned community known as Fanita Ranch.

Sincerely,

Tiffany Keller

10224 Strathmore Drive

Santee, CA 92071

I67-1: The comment expresses concern with fire evacuation associated with the proposed project. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire severity zone does not necessarily increase the risk.

I67-2: This comment states that a number of streets that end with chain-link fences could accommodate additional exit routes during an emergency as opposed to traffic being routed through only two entrances and exits to the planned development. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire.

This comment also addresses increased traffic on Fanita Parkway from the proposed project. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including

Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I67-3: The comment discusses Measure N and supports a public vote on the proposed project. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I67-4: This is a closing comment and does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I68: Michele Perchez, July 21, 2022

I68

From: michele perchez
To: Chris Jacobs
Cc: michele perchez
Subject: RE: revised Fanita Ranch EIR comment due July 25, 2022
Date: Thursday, July 21, 2022 9:22:13 AM

I68-1

Mr. Jacobs,

Please submit the following for the public record.

I68-2

The revised EIR for Fanita Ranch project application does not account for the current and ongoing problem in the City of Santee which is likely to impact this development, fires started by homeless encampments in water drainage habitats. What is the plan for preventing this? By adding increased access to the area, it seems guaranteed that a fire will occur in this area, putting project residents and the larger population at risk for property damage and injury or loss of life.

I68-3

This project should be approved for an alternate location within City limits, and closer to Town Center.

Thanks,

Michele Perchez
Santee Resident

I68-1: This comments states that the following information should be submitted for the public record. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I68-2: The comment raises concerns that the Recirculated Sections do not account for homeless encampment fires in water drainage habitats. The comment suggests that by adding increased access to the area, fire is more likely to occur, putting project residents and the larger population at risk for property damage and injury or loss of life.

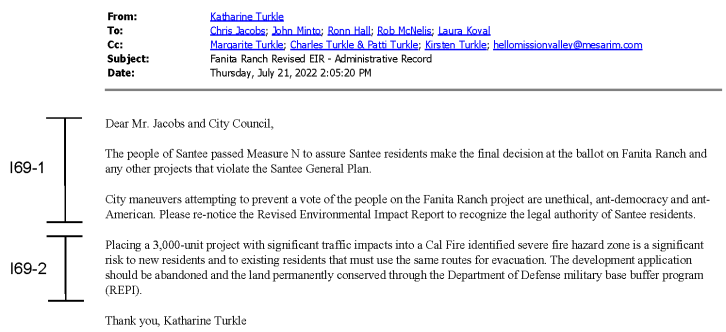
The City has experienced homeless encampments in some of its riparian habitats, specifically around the Carlton Oaks Golf Club. Fires have ignited and burned within these areas but have all been successfully extinguished due to fast firefighting response along with very high fuel moistures in these areas that do not facilitate fire spread. It is more likely for homeless/illegal activities to occur on the site in its current condition and land use, where many areas may remain out of sight or not visited for periods of time, than after proposed project buildout. The proposed project's Fire Protection Plan (Appendix P1) has evaluated the wildfire behavior, and the proposed project has been

designed to withstand the types of wildfires that may occur on Fanita Ranch. In addition, fire safety measures, including the fuel modification zones on site and adjacent to the proposed project and along the border with adjacent off-site neighboring properties, would minimize the potential for wildfire encroachment. Thus, there is greater risk relative to homeless-caused fires on the project site as it currently stands than with the proposed project constructed because the proposed project would provide numerous fire safety features and benefits for its residents and neighbors.

I68-3: This comment states that the proposed project should be approved for an alternate location within the City limits and closer to the Town Center. The Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). Please refer to the Preface and Thematic Response 1 – Recirculation and Scope of Review Claims. The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Therefore, no response is provided regarding additional alternatives to the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Comment Letter I69: Katharine Turkle, July 21, 2022

I69



From: Katharine Turkle
To: Chris Jacobs; John Minto; Ronn Hall; Rob McNelis; Laura Koval
Cc: Margarite Turkle; Charles Turkle & Patti Turkle; Kirsten Turkle; hellomissionvalley@mesarim.com
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Thursday, July 21, 2022 2:05:20 PM

I69-1

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I69-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you, Katharine Turkle

I69-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I69-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I70: Kristie Burson, July 22, 2022

I70

From: Kristie Burson
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch
Date: Friday, July 22, 2022 9:55:04 AM

Dear Mr. Jacobs and City Council,

I70-1 I'm a new resident to Santee. What sold me on this home was my front view of the hillsides and back view of the lakes; serene and peaceful. I'm really concerned with the proposed building of Fanita Ranch. I've seen the Home Fed Corp proposal and it theoretically sounds beautiful with all the sustainability qualities. The expansion of Fanita Parkway to three lanes directly behind my house is a tough pill to swallow. But what concerns and really scares me is being a high-risk fire area with only two roads in and two roads out. I'm comfortable saying two roads will not accommodate over 3,000 additional household units, current residents of Santee Lakes east, everyone at the parks, schools, future restaurant, and farm. Expanding another lane west bound on highway 52 and the expansion of a merge lane east bound to Santo road is a great idea without Fanita Ranch. I ask that you really think about the safety of all residents and consider keeping Santee a smaller village.

I70-2

I70-3

I70-4

Respectfully,

Kristie Burson
10224 Strathmore Dr.
Santee, Ca. 92071
858-232-7226

I70-1: This is an introductory comment and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I70-2: This comment expresses concern with the expansion of Fanita Parkway to three lanes. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding traffic along Fanita Parkway since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I70-3: This comment expresses concern regarding the two entry/exit roads to the project site having adequate capacity to serve project residents, existing Santee residents, and users of the parks, schools, farm, and future restaurant during a wildfire. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections

4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. The proposed project would meet or exceed the code requirements for access roads, including the 2019 California Fire Code, Appendix D, and Santee's local amendments to the California Fire Code. Two external points of ingress/egress are provided to/from the proposed project—Fanita Parkway and Cuyamaca Street—which can be used for a combination of evacuation and emergency access. These two routes lead to three main arteries traveling south off site (Fanita Parkway, Cuyamaca Street, and Magnolia Avenue) and numerous east–west connections off site during an emergency evacuation event. In addition, the proposed project provides the contingency option of on-site sheltering/refuge at designated locations if considered safer than evacuation.

I70-4: This comment supports additional improvement to State Route 52 and asks the City to consider safety of all residents. See response to comment I70-2. No response is provided regarding traffic improvements to State Route 52 since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR. Also see response to comment 170-3 regarding wildfire risk and safety.

Comment Letter I71: Shaune Dulay, July 22, 2022

I71

From: Shaune Dulay
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Friday, July 22, 2022 9:54:16 PM

Dear Mr. Jacobs and City Council,

I71-1 I am seriously concerned about the ***proposed*** building project of "Fanita Ranch" in Santee. I live in Santee towards the north end of Fanita Road past Mast Boulevard. My home, my family, and my neighbors will all be affected by this project if it gets passed. Prior to living in Santee, I lived in El Cajon for most of my life and remember having to evacuate during several wildfires over my lifetime. The worst was the 2003 Cedar Fire. Other immediate family members lived closer to the fire than we did and nearly did not make it out before the wildfire overtook their area. Many of their neighbors were not so fortunate and lost not only their homes, but everything they owned. Whereas my family members' homes were still intact. They were grateful for the hardworking firefighters that alerted them at the last minute to get out immediately! If those firefighters had not been our own personal relatives giving them the "heads up," they might not have made it out in time!

I71-2 I am most concerned about the location for this ***proposed*** "Fanita Ranch" project. My husband and I moved to our current home one year and a half ago. Many home insurance companies refused to cover us under their coverage. They said that it was due to the "high fire zone" that we lived in. This meant that we had to find a company that was willing to risk covering us and pay more for their coverage than had we not been in a high fire zone. If our home is destroyed by wildfire, we lose everything we have worked for in our careers and lifetime. What a devastating thought! Which homeowners insurance companies are going to be willing to cover these ***proposed*** 3,000 new homes? What will their cost be? Will my coverage then go up if these ***proposed*** homes are built? As it is for us and our neighbors, our homes were built back in 1984. How many wildfires have already threatened this area in the past?

I71-3 The biggest concern I have about the ***proposed*** "Fanita Ranch" project is the limited road access to and from the ***proposed*** development. Exactly how many roads will be built? On the development drawn-up map, I am only seeing one road access near Fanita Road and one through Cuyamaca Street in Santee. If this is true, how can that be? If there were to be a wildfire, my husband and I will need access to the same two roads as those 3,000 plus homeowners. That is assuming that each ***proposed*** home has only one vehicle. My estimated guess is that each ***proposed*** home has at least 2 vehicles, if not more. How long would that take for all of us to evacuate? Who will get access to the two roads first? Will there be any orderly manner of conduct? What if other vehicles are trying to enter into the ***proposed*** "Fanita Ranch" two roads to come assist their family members or friends to get out? What about our firefighters, law enforcement, and first responders that are also needing access to get into this ***proposed*** development? How will all of this happen? I cannot imagine the chaos of such an event! Is this being considered and looked at? At whose expense is this ***proposed*** project going to affect the most? The answer is, people like my husband and I that already live here and of course the many individuals that would move into those ***proposed*** homes. Are our lives and homes not that important that we should allow such a development to be passed? I sure hope not!

I71-4

I71-5 We all know that the progression of wildfires has no concept of time and for the need of each member to safely leave their home. All it knows is consuming as much combustible material

I71-1: This comment expresses concern with the proposed building of the Fanita Ranch Project and details the commenter's experience with wildfires over their lifetime. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4d, which details the features that would be provided to protect residents and structures from wildfire. The City acknowledges the comment and notes that it expresses the opinions of the commenter and does not raise an issue related to the adequacy of any specific section or analysis in the Recirculated Sections. The City will include the comment for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required or necessary.

I71-2: This comment states many insurance companies refused to cover the commenter's property due to the location in a very high fire hazard area and surmises that future residents living in the proposed project would have the same issue. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. The City will include the comment for review and consideration by the decision-makers prior to a final

decision on the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I71-3: This comment states that the biggest concern for the proposed project is road access to and from the proposed development during a wildfire and asks how many roads would be constructed. Refer to Recirculated Chapter 3, Project Description, for a description of the project's proposed roadway improvements and Recirculated Section 4.18, Wildfire. Please also refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire. The proposed project would meet or exceed the code requirements for access roads, including the 2019 California Fire Code, Appendix D, and Santee's local amendments to the California Fire Code. Two external points of ingress/egress are provided to/from the proposed project—Fanita Parkway and Cuyamaca Street—which can be used for a combination of evacuation and emergency access. These two routes lead to three main arteries traveling south off site (Fanita Parkway, Cuyamaca Street, and Magnolia Avenue) and numerous east–west connections off site during an emergency evacuation event.

I71-4: This comment expresses concern for evacuation timing and ingress of first responders during a wildfire event. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire. Please also refer to Appendix P2, Wildland Fire Evacuation Plan, and Appendix D of that plan, which provide discussions of first responder ingress and evacuation time modeling. Regarding the ability for responders to access the site, all proposed project roads would provide adequate width for evacuating vehicles to exit, while dedicated inbound lanes would remain open for emergency vehicles. The Wildland Fire Evacuation Plan (Appendix P2) explains that emergency responders will coordinate the safest possible evacuation based on the dynamic circumstances of the actual event, including the appropriate phasing of the evacuation, and use of the most appropriate ingress and egress routes for area residents and emergency responders (Wildland Fire Evacuation Plan [Appendix P2]):

During an emergency evacuation from the Fanita Ranch community, the primary and secondary roadways may be providing citizen egress while responding emergency vehicles are inbound. Because the roadways are all designed to meet or exceed County of San Diego Consolidated Fire Code requirements — including unobstructed travel lanes, adequate parking, 28-foot inside

radius, grade maximums, signals at intersections, and extremely wide roadside fuel modification zones — potential conflicts that could reduce roadway efficiency are minimized, allowing for smooth evacuations.

The evacuation time model assumed that two-way travel would be maintained during an emergency (Appendix D to Appendix P2, Wildland Fire Evacuation Plan).

Evacuating vehicle count assumptions used in the evacuation time model are described in the CR Associates memorandum and provided in tabular form at Table 1, Evacuating Vehicles, of Appendix D to Appendix P2, Wildland Fire Evacuation Plan. The number of evacuating vehicles was calculated by taking the total number of residential units and multiplying it by the average vehicle ownership (2.46 vehicles per household and 1.65 vehicles per Active Adult Residential unit) in the area.

I71-5: This comment provides a statement about wildfires and evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire. The comment does not raise an issue related to the adequacy of any specific section or analysis in the Recirculated Sections. Therefore, no further response is required of necessary.

I71-5 cont.

as possible in the shortest amount of time!

I71-6

I am asking that your City Council NOT approve the development of "Fanita Ranch!" Please consider the safety of those of us that already live near this ***proposed*** project and its impact. Thank you for your time and attention to this crucial matter!

Sincerely,
Shaune Dulay

I71-6: This comment opposes the proposed project and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I72: Michele Perchez, July 22, 2022

I72

From: michele perchez
To: Chris Jacobs
Subject: RE: revised Fanita Ranch EIR public comment due July 25
Date: Friday, July 22, 2022 3:22:57 PM
Attachments: FR MP fire mitigations and statements.docx

Please find my public comment attached.

Thank you.

Michele

July 22, 2022

RE: revised EIR for Fanita Ranch Development project (comments due July 25)

Dear Mr. Jacobs,

I72-1 The following are aspects of the project which make for increased risk of trauma, injury, or death from wildfire for both project residents and residents in adjacent developments. This project should not have been planned for this very high-risk fire zone. Though the EIR Reject claims that wildland fires associated with the project would not result in direct/indirect loss, injury, or death, this is illogical. The public has repeatedly requested the City only consider developments closer or within the city's Town Center area.

I72-2 Traffic improvements needed for enhanced fire evacuation safety not being built before properties are occupied—this puts project residents and residents from neighboring areas at risk of injury and death. Specifically, no traffic improvements until 118th equivalent dwelling unit built (TRA-25), 236th edu (TRA-8). Since these are the main evacuation corridors, this is not an acceptable plan. Additionally, the Magnolia extension, also one of the main evacuation routes, will not be complete until the 1,500th edu.

I72-3 Evacuation traffic will increase evacuation time, putting project residents and residents from neighboring areas at risk of trauma, injury, and death. The plan that provides for staged and targeted evacuation of residents is not realistic. Residents will make their own individual decisions, and the plan must at least consider contingencies of a near mass evacuation for such a small, dense, city footprint.

I72-4 Please reject EIR approval and work to purchase the property as a conservation easement. Recover funds by creating the Milton Santee Nature Preserve, charging yearly membership to sustain conservation efforts and outreach to the public at an on-site tiny house Nature Center.

Thank you,

Michele Perchez

Santee Resident

I72-1: This comment challenges the conclusions reached in the Final Revised EIR regarding wildland fire risk. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk, and subsection 4d, which explains fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies. In addition, the commenter does not provide substantial evidence as to why they think the conclusions in the Final Revised EIR are illogical. Therefore, no further response is required.

This comment further states that the public has repeatedly requested that the City only consider developments closer to the Town Center area. The comment appears to raise broader social or political issues and does not raise an issue related to the adequacy of any specific section or analysis of the Recirculated Sections. The Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Therefore, no response is provided regarding additional alternatives to the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I72-2: This comment states that traffic improvements needed for enhanced fire evacuation safety would not be built before properties are occupied, which puts residents at risk. Please refer to response to comment I105-3. Also, refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire.

As the comment notes, the completion of traffic improvements is tied to certain levels of occupancy of the proposed project related to traffic congestion impacts. Several facts are notable. First, because traffic mitigation measures are tied to occupancy levels, fewer occupants of the proposed project would be evacuating the proposed project prior to completion of those improvements. Second, calculation of evacuation time differs from calculation of everyday traffic (level of service) impacts. Evacuation traffic is based on roadway capacity, as well as the many strategies that can be implemented during an evacuation effort to enhance traffic flow and reduce the overall evacuation time, including contraflow, traffic signal coordination, closure of off- and on-ramps, Intelligent Transportation Systems, segregation of pedestrian and vehicle traffic, exclusive bus routes, phased/targeted evacuation, phased release of parking facilities, use of designated markings, road barriers, and use of the San Diego Freeway Patrol Service.

If a wildfire occurs before completion of the various traffic improvements, including the Magnolia Avenue extension, the same considerations would be enacted to manage an evacuation as detailed in the Wildland Fire Evacuation Plan (Appendix P2). There would still be the ability to move targeted populations out of the area via two major and fuel-modified access routes, Fanita Parkway and Cuyamaca Street, with numerous existing connections to present day Magnolia Avenue. First responders would have numerous tools at their disposal to control evacuation traffic. The contingency option of on-site sheltering/refuge at designated locations would also be a viable alternative, if considered safer than evacuation. Further, during construction, there would be plans to ensure that evacuation options are available at all times. Refer to Appendix H, Construction Fire Prevention Plan, of the Fire Protection Plan (Appendix P1).

Note that the CR Associates evacuation time travel analysis, provided in Appendix D to the Wildland Fire Evacuation Plan (Appendix P2) considered evacuation time for the proposed project both with and without completion of the Magnolia Avenue extension in Scenarios 2 and 3 of that memorandum. It also considered evacuation time without any improvements in place in the "existing conditions" scenarios.

The evacuation model is necessarily limited in scope given the numerous variables inherent in a wildfire and evacuation event and cannot consider every unknown or variable that may occur during an evacuation event or each stage throughout project construction (Wildland Fire Evacuation Plan [Appendix P2], Section 6.3, and Appendix D [describing model assumptions and limitations]). To do so would be too speculative because the City would need detailed construction information that is not known at this time and that would be variable throughout project construction.

Further, CEQA does not require the City to analyze every conceivable situation that may occur or engage in undue speculation, particularly in the context of an evacuation event that presents changeable and unpredictable scenarios (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors [2013] 216 Cal.App.4th 614, 639-640; San Joaquin Raptor Rescue Center v. County of Merced [2007] 149 Cal.App.4th 645, 666; Guidelines, Section 15151). The Court of Appeal in League to Save Lake Tahoe Mountain etc. v. County of Placer (2022) 75 Cal.App.5th 63, 139–140, review denied (May 18, 2022), recently found the County of Placer was not required to consider various suggested "what if" evacuation scenarios. The Court of Appeal analysis is informative here:

> Courts have made clear that "CEQA does not require evaluation of speculative impacts (Guidelines, § 15145)" (National Parks & Conservation Assn. v. County of Riverside [1999] 71 Cal.App.4th 1341, 1364). "Agencies are not required to engage in 'sheer speculation' as to future environmental consequences of the project" (Chaparral Greens v. City of Chula Vista [1996] 50 Cal.App.4th 1134, 1145, quoting Kings County Farm Bureau v. City of Hanford [1990] 221 Cal.App.3d 692, 738).

CEQA also does not require an analysis to be exhaustive. It is "not necessary that the analysis be so exhaustively detailed as to include every conceivable study or permutation of the data" (San Joaquin Raptor Rescue Center v. County of Merced [2007] 149 Cal.App.4th 645, 666; Guidelines, § 15151). "'An EIR need not include all information available on a subject[;] . . . [all that is required is] sufficient information and analysis to enable the public to discern the analytic[al] route the agency traveled from evidence to action.' [Citation.] 'A project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. . . . That further study . . . might be helpful does not make it necessary' " (North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors [2013] 216 Cal.App.4th 614, 639-640).

It is difficult to predict how an actual evacuation will unfold and determine how a project may impact it. An evacuation is developed and directed in real time by those conducting it in response to the unique conditions before them. As a member of the County's office of emergency services explained to the planning commission, an evacuation is "always going to be difficult. There's no evacuation that ever goes textbook smooth. It's like running a play in football. You call the play and then you hope things go as best as they can. . . .

CEQA requires an EIR to reflect a good faith effort at full disclosure; it does not mandate perfection, nor does it require an analysis to be exhaustive (Guidelines, § 15151)" (Kings County Farm Bureau v. City of Hanford, supra, 221 Cal.App.3d at p. 712). "An EIR is required to evaluate a particular environmental impact only to the extent it is 'reasonably feasible' to do so" (Rialto Citizens for Responsible Growth v. City of Rialto [2012] 208 Cal.App.4th 899, 937, quoting Guidelines, Section 15151).

The evidence here indicates that the County did not abuse its discretion in determining its methodology for evaluating the impact to its evacuation plan or selecting the standard of significance, and that substantial evidence supports the EIR's conclusion. The EIR's analysis provides a reasonable explanation under modeled circumstances of how the project will affect its residents'

ability to evacuate and emergency responders' ability to access the area and the site.

Similarly, the City modeled reasonable evacuation scenarios and provided a detailed narrative explanation of how the proposed project will affect evacuation and emergency responders' ability to access the area and the site. While there are unlimited "what if" scenarios that may occur in an evacuation, evaluation of every conceivable scenario would be speculative and is not required by CEQA. However, the evacuation "playbook" (Annex Q [Evacuation], 2020 City of Santee Emergency Operations Plan, and Wildland Fire Evacuation Plan [Appendix P2]) would be followed by first responders in such scenarios to foster safe and effective evacuations throughout project construction and operation.

I72-3: This comment challenges the conclusions of the Recirculated Section 4.18, Wildfire, and the project-specific Wildland Fire Evacuation Plan (Appendix P2) with regard to evacuation timing and scenarios and asks for a scenario with near mass evacuation. Please see response to comment I72-2. The comment also states that staged and targeted evacuation is not realistic. The City does not concur with this assertion. The Wildland Fire Evacuation Plan (Appendix P2) and Fire Protection Plan (Appendix P1) describe San Diego County's success in implementing targeted/phased evacuation. This type of evacuation is also consistent with the County's

Emergency Operations Plan (Annex Q). Further, the contingency option of on-site sheltering/refuge at designated locations would also be a viable alternative, if considered safer than evacuation.

I72-4: This comment states that the Final Revised EIR should be rejected and suggests an alternative where the property is placed under a conservation easement. The City acknowledges the comment expresses the opinion of the commenter unrelated to the adequacy or accuracy of the Recirculated Sections and notes that it raises economic, social, or political issues that do not appear to relate to any physical effect on the environment. See also response to comment I72-1.

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Comment Letter I73: Nelly Purvis, July 22, 2022

I73

From: Nelly Purvis
To: Chris Jacobs
Subject: Fanita nightmare
Date: Friday, July 22, 2022 6:49:08 PM

Dear Mr. Jacobs and City Council,

I73-1 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program

I73-2 **The people of Santee passed Measure N to assure that we as tax paying citizens were able to have that opportunity to make the decision for this ridiculous project.**

This project is a terrible idea, I'm just wondering what are the motives of those who refuse to listen to our concerns??? The decision that was made to not allow us to vote on the ballot is very frustrating to all of us. Everyone on your board pretty much chose some ridiculous money developer than our outcry/concerns. The city council members do not favor our opinion, this is duly noted by the Santee residents.

I73-3 **Placing 3,000-unit project with a SIGNIFICANT traffic and water shortage impact plus Cal For identified that area as a fire hazard zone. You're literally placing new residents and existing residents in harms way!!! And why??? Who is getting their pockets filled for Fanita??? This is absolutely ridiculous.**

I73-4 **Obviously, there was a good number of residents here in Santee who have been very concerned about this project. Therefore, Measure N was passed. Does that even speak volumes??? What is the actual logic with the City Council members involved? Because clearly, it's not us. This development application needs to be abandoned and instead conserve the land through the Department of Defense.**

I73-5 We also have wildlife that are slowly losing their home/area as well. Maybe The whole board should go out and take a hike! I never heard of anyone hating nature so bad they want to destroy such a beautiful area. Go over and check out the area, In the spring time you so many beautiful things, both plant and animals. It's just sad that every single piece of open space has to be destroyed.

We're already crowded with people here, traffic, transients, water shortages. Who are you actually supporting??? The Santee citizens or Fanita Ranch and their realtors????

Please consider our request.

Thank you,

Nelly Purvis

I73-1: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding potential traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Finally, this comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and

the alternative's analysis was deemed sufficient, this suggestion is rejected.

I73-2: This comment states that Measure N was passed to allow Santee residents to make a final decision on the proposed project and supports a vote by the people. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I73-3: This comment is concerned with traffic and water supply impacts of placing the proposed project in a fire hazard severity zone. Please refer to response to comment I73-1 regarding the construction of homes in a fire hazard severity zone. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. No response is provided on the traffic and water supply impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I73-4: This comment states that Measure N was passed due to the concerns of the residents and that the land should be conserved through the Department of Defense. With respect to Measure N, please refer to response to comment

I73-2. With respect to conservation with the Department of Defense, please refer to response to comment I73-1.

I73-5: This comment is concerned with the loss of wildlife and open space, overcrowding, traffic, homelessness, and water shortage with the proposed project. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. No response is provided regarding wildlife and open space, overcrowding, homelessness, and water supply impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

Comment Letter I74: Sabrina, July 22, 2022

I74

From: Sabrina
To: Chris Jacobs
Subject: Fwd: Fanita Ranch public safety concerns comment
Date: Friday, July 22, 2022 10:37:45 PM

I74-1 Hello. I am a 4 year homeowner at Riverwalk. It was brought to my attention at the last concert in the park objections to Fanita Ranch development. I can easily see how this would slip by our residents with the timing in this pandemic. I forgot to vote myself and certainly this measure slipped by me.

I74-2 This is my initial response to what I learned. If asked to present this in a more public way, I would feel much safer as a single widow who's been stalked before for speaking up if it can be fact checked and a fireman/chief would confirm the danger is not just to a portion of residents, or if he/she can speak to facts after me? In general angry people will believe firemen, their rescuers more than an unknown middle aged stranger. But firemen and policemen can't talk like this, don't you think? For now please keep my silly email address anonymous. If you'd like to follow up just write back.

> If CAL FIRE deems it a high fire hazard severity zone then there's no possible reason for this city or anyone to question this. This is NOT a red or a blue issue. It's our lives. Where else do you go for authoritative information on fire hazard? No, a new good-looking, funny realtor sending you flyers about large beautiful homes just in your price range is the opposite of a reliable source on this.
>
> I74-3 Nobody, and I mean nobody, can convince me or should be convinced by developers that what our firemen say is a death trap is not a death trap. Believe our unsung heroes who keep us safe often even from our own ignorant decisions and unknown dangers beyond and within our living rooms.
>
> If a city council thinks you can conscientiously doom the people you are supposed to represent to unnecessary and horribly painful deaths and still get my or my neighbor's support, you are inhumane monsters. Monsters who may be signing their very own death certificates.
> This is a test of whether you can represent the most basic need of our rights to life. Could these lives not be your very own too? Tell me how you'd escape a blazing ball of fire raging over and across these drought-stricken hills when fire season hits. And tell us with credible authority when in San Diego fire season ever **ends**.
>
> I74-4 As for the developers who keep pushing for this danger to the very people they say they want to make safe in their homes, *in their **homes** with their families*, more than shame on you. Your hypocrisy on your flyer invitations and quiet petitions is worse than any form of graft or embezzlement. Do you not have families yourselves?
> It's murder that yes, might take years to sweep through this corridor, and will likely never make it to trial. You might get away with murder here, but is that what you want your legacy to be?
>
> Find other ways and places to make money that do not *kill* the very people you invite to live in what you've crafted. You're clearly smart and capable people who can work toward

I74-1: This is an introductory comment and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I74-2: This comment includes further introductory remarks and asks to keep the commenter's identity confidential. The comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I74-3: This comment provides the commenter's opinion about various fire scenarios and information sources. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone is not precluded and does not necessarily increase the risk. Note also that the wildland fire risk and features prescribed in the Fire Protection Plan (Appendix P1) have been analyzed and developed to reduce risk to acceptable levels at Fanita Ranch by applying comprehensive guidelines developed by a

I74-4 cont.

I74-5

your monetary interests and may really believe in the good of what you want to build. We do deserve affordable housing. I'd argue it's a human right. But it must be affordable AND safe.
I haven't met a home builder in America who knowingly intends to hurt the very people they work so hard and long to home.
You **can** both support your families and keep ours alive in our homes. If you don't know what to do today, LEARN. If the expected loss of revenues from this planned development is big, there are lots of people who can help you stem the tide of lenders and investors.
This is America which I still believe can at its most fundamental core keep each other safe with win-wins, even when we haven't seen much of each other for a while and can be scared by what we read and watch and conclude about people we don't know so well. This isn't Russia or Afghanistan where if I speak like this to money I might be quietly forever silenced walking in one of our beautiful Santee parks where our children, friends and families play. Let's stay true to our professed family values and not harass, defame or worse this young widow, who yes, is as vulnerable to threats as any 'new kid on the block.'
And developers, if you don't know where to start to learn about sustainable development you can ask *this* librarian, though after spending 12 years in middle schools I'm not an expert in this area. But I can tell you right now exactly what I'd say. Go to our finest city's central library in San Diego and explain your dilemmas. If you haven't tapped this hub of knowledge and interconnected media and human resources connecting state, federal and county cooperation, you've been more than losing out on getting your tax money's worth for you. You have advocates you just have to ask who will not charge you more than you already send in each year. If you thought we're around just to get your kids reading 200,000 words before age 5, which is very important, you definitely underestimate us. There has yet to be a solution to a problem, great or small, that does not involve reading and learning. You can do this.

Sabrina

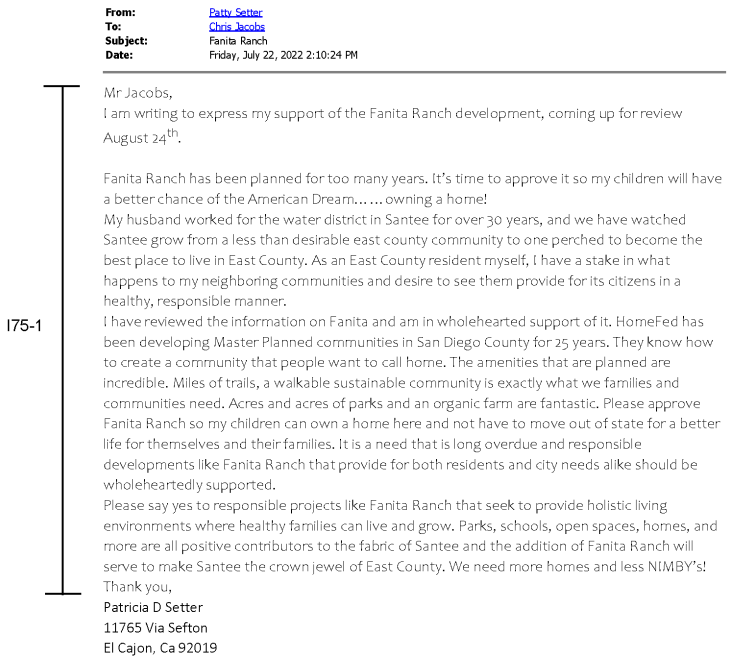
technical panel of 17 professional fire prevention officers and fire protection specialists and planners. The proposed project's Fire Protection Plan (Appendix P1), Wildland Fire Evacuation Plan (Appendix P2), and the evacuation time model were prepared with thorough review and input from the Santee Fire Department.

I74-4: This comment provides the commenter's opinion about the home building industry. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I74-5: This comment provides the commenter's opinion and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I75: Patricia Setter, July 22, 2022

I75



From: Patty Setter
To: Chris Jacobs
Subject: Fanita Ranch
Date: Friday, July 22, 2022 2:10:24 PM

Mr Jacobs,
I am writing to express my support of the Fanita Ranch development, coming up for review August 24th.

Fanita Ranch has been planned for too many years. It's time to approve it so my children will have a better chance of the American Dream…… owning a home!
My husband worked for the water district in Santee for over 30 years, and we have watched Santee grow from a less than desirable east county community to one perched to become the best place to live in East County. As an East County resident myself, I have a stake in what happens to my neighboring communities and desire to see them provide for its citizens in a healthy, responsible manner.
I have reviewed the information on Fanita and am in wholehearted support of it. HomeFed has been developing Master Planned communities in San Diego County for 25 years. They know how to create a community that people want to call home. The amenities that are planned are incredible. Miles of trails, a walkable sustainable community is exactly what we families and communities need. Acres and acres of parks and an organic farm are fantastic. Please approve Fanita Ranch so my children can own a home here and not have to move out of state for a better life for themselves and their families. It is a need that is long overdue and responsible developments like Fanita Ranch that provide for both residents and city needs alike should be wholeheartedly supported.
Please say yes to responsible projects like Fanita Ranch that seek to provide holistic living environments where healthy families can live and grow. Parks, schools, open spaces, homes, and more are all positive contributors to the fabric of Santee and the addition of Fanita Ranch will serve to make Santee the crown jewel of East County. We need more homes and less NIMBY's!
Thank you,
Patricia D Setter
11765 Via Sefton
El Cajon, Ca 92019

I75-1

I75-1: This comment letter expresses support for the proposed project and the Recirculated Sections of the Final Revised EIR. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the EIR. Therefore, no further response is required.

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Comment Letter I76: Theresa Acerro, July 23, 2022

I76

From: THERESA ACERRO
To: Chris Jacobs
Subject: Fanita Ranch
Date: Saturday, July 23, 2022 4:20:20 PM

I76-1 This needs to be defeated. It is unsafe for Santee residents. A fire there which would be likely could spread to other adjoining areas easily during East Winds.

I76-2 This area would be an excellent addition to tourist, hiker, biker people who love nature. It should be preserved and marketed to increase the income of Santee from nature oriented tourism, not destroyed by homes causing more traffic congestion on our streets and straining city resources..
Theresa Acerro

I76-1: This comment states the commenter's opposition to the proposed project and states that a fire could spread to other adjoining areas during East Winds. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4a, which discusses evacuation planning for the proposed project during wind-driven fires, and subsection 4d, which addresses fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies.

I76-2: This comment supports preservation of the project site and mentions concerns regarding traffic congestion and City resources. The comment states the commenter's opinion but does not raise any issue related to the analysis or adequacy of the Recirculated Sections. Please refer also to Thematic Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR evaluated traffic, utilities, and public service impacts and a reasonable range of alternatives to reduce impacts from the proposed project in compliance with California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(a). None of these sections were found deficient in the trial court's ruling, judgement, and writ. Therefore, no further response is provided since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I77: Adam Bea, July 23, 2022

I77

From: adam bea
To: Chris Jacobs; Ronn Hall; Laura Koval; John Minto; Dustin Trotter
Subject: FINAL DECISION at the ballot on Fanita Ranch
Date: Saturday, July 23, 2022 7:55:39 PM

Dear Mr Jacobs and City Council,

I77-1

The great people of Santee passed Measure N to assure Santee residents make the FINAL DECISION at the ballot on Fanita Ranch and any other project that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American, the only voice we have is our vote. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I77-2

Placing a 3,000 unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program.

Sincerely

Adam Bea

9962 Jill St

Santee, Ca 92071

I77-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I77-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I78: Day Family, July 23, 2022

I78

From: Danielle Schniepp
To: Rob McNelis; Chris Jacobs; Dustin Trotter; John Minto; Laura Koval; Ronn Hall
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 23, 2022 1:34:44 PM

Attention Mr. Jacobs and City Council:

I78-1

The voting constituents of Santee passed Measure N to assure that Santee residents would make the final decision at the ballot on Fanita Ranch and any other projects that violate the current Santee General Plan.

City maneuvers attempting to block a vote of the people on the Fanita Ranch project are unethical, anti-democratic, and threaten the rights we have as Americans! Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I78-2

Placing a 3,000 unit project with significant stresses to our neighborhood infrastructure into a Cal Fire identified severe fire hazard zone is a disaster waiting to happen! New and existing residents would be bound to the same evacuation routes that currently are in place, which already seem inadequate.

The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you for your consideration on this matter,

The Day Family
10351 Strathmore Drive
Santee, Ca 92071

I78-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I78-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I79: Mark DiPari, July 23, 2022

I79

From: Mark DiPari
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 23, 2022 8:30:21 PM

Dear Mr. Jacobs and City Council,

I79-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and are anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I79-2

Placing a 3,000-unit project with significant traffic impacts into a Cal-Fire identified severe fire hazard is a significant risk to new residents and existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program.

Thank You,

Mark A. DiPari

I79-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I79-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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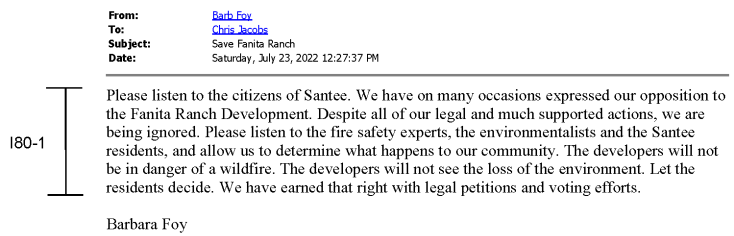
Comment Letter I80: Barbara Foy, July 23, 2022

I80



From: Barb Foy
To: Chris Jacobs
Subject: Save Fanita Ranch
Date: Saturday, July 23, 2022 12:27:37 PM

I80-1

Please listen to the citizens of Santee. We have on many occasions expressed our opposition to the Fanita Ranch Development. Despite all of our legal and much supported actions, we are being ignored. Please listen to the fire safety experts, the environmentalists and the Santee residents, and allow us to determine what happens to our community. The developers will not be in danger of a wildfire. The developers will not see the loss of the environment. Let the residents decide. We have earned that right with legal petitions and voting efforts.

Barbara Foy

I80-1: The commenter supports a public vote for the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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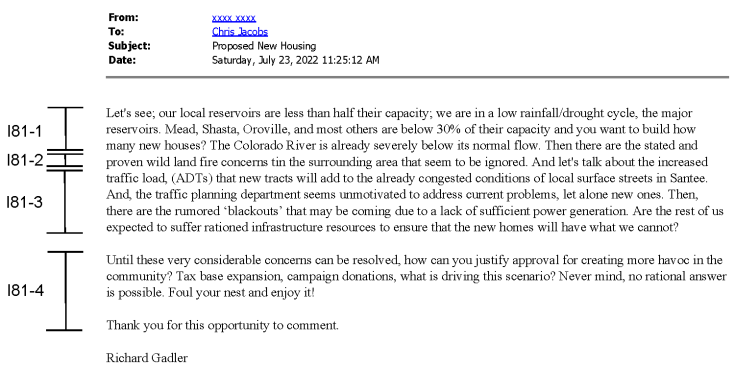
Comment Letter I81: Richard Gadler, July 23, 2022



I81

From: xxxx xxxx
To: Chris Jacobs
Subject: Proposed New Housing
Date: Saturday, July 23, 2022 11:25:12 AM

I81-1
I81-2
I81-3

Let's see; our local reservoirs are less than half their capacity; we are in a low rainfall/drought cycle, the major reservoirs. Mead, Shasta, Oroville, and most others are below 30% of their capacity and you want to build how many new houses? The Colorado River is already severely below its normal flow. Then there are the stated and proven wild land fire concerns tin the surrounding area that seem to be ignored. And let's talk about the increased traffic load, (ADTs) that new tracts will add to the already congested conditions of local surface streets in Santee. And, the traffic planning department seems unmotivated to address current problems, let alone new ones. Then, there are the rumored 'blackouts' that may be coming due to a lack of sufficient power generation. Are the rest of us expected to suffer rationed infrastructure resources to ensure that the new homes will have what we cannot?

I81-4

Until these very considerable concerns can be resolved, how can you justify approval for creating more havoc in the community? Tax base expansion, campaign donations, what is driving this scenario? Never mind, no rational answer is possible. Foul your nest and enjoy it!

Thank you for this opportunity to comment.

Richard Gadler

I81-1: This comment mentions drought and water supply availability throughout California. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Utility and Service Systems, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided on water supply issues since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I81-2: This comment states that wildland fire concerns in the surrounding area seem to be ignored. Recirculated Section 4.18, Wildfire, specifically evaluates whether the project would "expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires." In addition, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which discusses fire protection and safety on the project site, the defensibility of modern subdivisions, and temporary refuge strategies and explains

that placing a development in a high fire severity zone does not necessarily increase the risk.

I81-3: This comment cites concerns with current traffic impacts and energy supply issues. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Transportation and Utility and Service Systems sections of the Final Revised EIR for the Fanita Ranch Project were not found deficient by the trial court and were not revised and recirculated. Therefore, no response is provided regarding the project's traffic impacts or energy/utility needs since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I81-4: This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

Comment Letter I82: Janet Garvin, July 23, 2022

I82

From: Janet Garvin
To: Chris Jacobs; John Minto; Ronn Hall; Rob McNelis; Laura Koval; dustintrotter@cityofsanteeca.gov
Subject: RE: Recirculated Fanita Ranch EIR Comments
Date: Saturday, July 23, 2022 12:47:23 PM

I82-1 I would like to comment that **I fully concur with the comment letter being submitted by Mr. Van Collinsworth** (you will be receiving Mr. Collinsworth's letter in due course) regarding the recirculated Fanita Ranch EIR.
First of all, as I previously submitted in my own comments, I agree with his **well researched and documented** comments about the **illegal and undemocratic** action of the city council and the city to force this development through. It is unconscionable and is clearly all about the money. **The project requires a vote of the people**.

I82-2 Secondly, I concur with Mr. Collinsworth's judgement of the EIR on the fire safety elements. While I alluded to some of the items in my own comments, **Mr. Collinsworth, as an experienced firefighter, has knowledge, experience and expertise** far superior to mine and **has done a superlative job** in examining and critiquing the EIR.
I concur with Mr. Collinsworth's judgement that the **recirculated EIR is a complete failure and the project should be rejected.**
Thank you,
Janet Garvin
Settle Rd

I82-1: This comment states that the commenter concurs with Preserve Wild Santee's comment letter (comment letter O2) and supports a public vote for the proposed project. Please see response to comment O2. In addition, please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I82-2: This comment states that the commenter supports Preserve Wild Santee's judgement on the fire safety elements of the Final Revised EIR and opposes the proposed project. Please see responses to comment in comment letter O2. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I83: Suzette Gerard, July 23, 2022

I83

From: suzette beattie
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 23, 2022 5:20:27 PM

Dear Mr. Jacobs and City Council,
The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan. I83-1

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anit-democratic and anti-America. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents. I83-1

Placing a 3,000 unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI). I83-2

Thank you,
Suzette Gerard
10370 Strathmore Dr., Santee, CA 92071

I83-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I83-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I84: Richard Haines, July 23, 2022

I84

From: Rick Haines
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: Fanita Ranch Revised EIR - Administrative Record
Date: Saturday, July 23, 2022 5:17:03 PM

I84-1

Dear Mr. Jacobs and City Council,
The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anit-democratic and anti-America. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I84-2

Placing a 3,000 unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,
Richard Haines
10370 Strathmore Dr, Santee, CA 92071

I84-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I84-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I85: Laura Hunter, July 23, 2022

I85

From: Laura Hunter
To: Chris Jacobs
Subject: Comment on Fanita Ranch REIR
Date: Saturday, July 23, 2022 10:49:02 AM

I85-1

Dear Mr. Jacobs,

Please accept my comment in opposition to the Fanita Ranch REIR as being significantly deficient.

I85-2

One of many flaws in the REIR is the alleged 'worst-case' modeling which improperly underestimates the impacts. Maximum temperatures and wind speeds are often underestimated in developer driven analysis.

REIR 4.8-2. *"Extreme conditions, used in worst-case fire modeling for the project site, include 92ºF temperatures..."* However, maximum temperatures have reached 100 and can be expected to reach even higher in significant heat events.

In another place, the REIR notes Santa Ana wind speeds **up to** 60 MPH. However, Where I live, just a few miles north of the Fanita Ranch site winds speeds were clocked at 100 mph during the Witch Creek fire.

Both of these 'worst-case' measures are grossly deficient and significantly understate the true and expected worst case conditions.

As the climate crisis worsens, especially if we continue to build sprawl development in dangerous locations like Fanita Ranch, temperatures will also continue to rise as will the severity of drought conditions. The REIR should conduct a true worst-case analysis using, at a minimum, 100 mph winds and temperatures between 110-120 degrees.

The failure of this modeling alone renders this analysis undefensible.

Thank you for your consideration.

Laura Hunter

I85-1: This is an introductory comment expressing project opposition and the conclusory opinion that the Recirculated Sections are deficient. Substantive comments are addressed below. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I85-2: This comment claims that the Recirculated Sections underestimated wildfire impacts. The comment is incorrect in stating that the proposed project's fire behavior modeling (Appendix P1) used underestimated inputs. The models include industry standard weather inputs, including averages over many years, as the system is designed. The weather data includes historical climate information from a nearby Remote Automated Weather System station and is the preferred source for fire behavior modeling. Regardless, even if the inputs were changed to adopt the inputs preferred by the commenter, there would be minimal changes in modeling outputs. The Fire Protection Plan (Appendix P1) used model inputs that are verifiable and repeatable. For example, wind speed values were established by San Diego County. These County standards identify appropriate wind speed inputs that are based on maximum recorded wind speeds and an analysis of 99th percentile wind speeds from

local remote automated weather stations (RAWS). The peak wind values identified in the County standards (and used in the Fire Protection Plan [Appendix P1]) are the highest wind speeds recorded by a RAWS during the 2003 Cedar Fire. It is estimated that the proposed project could have proposed 100 feet of fuel modification zone (FMZ) and would have been consistent with code requirements and likely provided adequate protection, but these areas were extended to 150 to 170 feet where the off-site fuels were heavier and would produce longer flame lengths and more intense fire. This FMZ extension achieves setbacks of at least twice the modeled flame lengths and provides not only structure protection but safe defensible space for firefighters. The comment presents an unsubstantiated opinion regarding modeling inputs and therefore raises no new issues that have not been adequately addressed in the Final Revised EIR.

Comment Letter I86: Rosemary Hutzley, July 23, 2022

I86

From: Rosemary Hutzley
To: Chris Jacobs
Subject: Fanita Ranch
Date: Saturday, July 23, 2022 11:14:05 AM

I86-1

Chris,
My only comment is in November the citizens of Santee have the right to vote on whether we have a huge development in our city. I am not going to mention the problems the development will create for everyone because you and the council know what they are. Rosemary Hutzley

Sent from Yahoo Mail for iPhone

I86-1: This commenter supports a public vote on the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I87: David McNeil, July 23, 2022

I87

From: Dave McNeil
To: Chris Jacobs
Subject: Fanita Ranch RFEIR Comments
Date: Saturday, July 23, 2022 2:47:33 PM
Attachments: Comments of David McNeil on Fanita Ranch RFEIR.pdf

POB 513
Gardnerville, NV 89410

July 25, 2022

Mr. Chris Jacobs, Principal Planner
Department of Development Services
Santee City Hall, Building 4
10601 Magnolia Avenue
Santee, CA 92071
Email: cjacobs@cityofsanteeca.gov

Subject: Fanita Ranch Revised Final Environmental Impact Report "RFEIR"

Dear Mr. Jacobs,

I87-1 The following comments pertain to the Fanita Ranch RFEIR, including the wildfire attachments.

I87-2 In my experience as a Community Development Planner, projects must be consistent with terms of the controlling General Plan or seek amendment. The Fanita Ranch project is clearly not consistent with Land Use Element lot requirements of the Santee General Plan, yet the RFEIR claims a Specific Plan and General Plan Amendment are no longer required. I suggest the city/applicant revisit this issue and either conform to the General Plan or seek the proper legal amendment.

I87-3 Recent wildfires in California and Colorado with significant structure losses demonstrate the vulnerability of densely constructed subdivisions, such as those miniscule separations proposed for Fanita Ranch. Once one structure ignites in a wind-driven fire, the blaze moves rapidly from structure to structure. Consistency with the General Plan would reduce the significant propensity for structure-to-structure fire transfer on site because the larger lots would allow for a design separation in excess of 30 feet between proposed homes.

I87-4 As disclosed by the RFEIR, the project site is located within a Very High Fire Hazard Severity Zone and is subject to severe wildland fire behavior. Fuels include FM4 chaparral, which would surround the island of development on the northeast portion of the property and its ingress/egress routes. FM4 chaparral burns at high intensity even under moderate weather conditions. These conditions would place the public and firefighters at significant risk.

While all of Fanita is subject to high intensity burns, the northern portion of the site has the greatest alignment with regional open space and the Santa Ana wind-driven fire corridor. Therefore, alternatives to the project that eliminate, relocate, or consolidate development to the existing wildland-urban interface (WUI) should be a high priority to avoid significant adverse safety impacts.

I87-5 Public Safety Power Shutoff (PSPS) programs have been implemented by California electric utilities in recent years as extreme fire conditions and power line failures have resulted in increasingly devastating wildfires across California.[1] In 2019, PSPS actions

[1] https://www.cpuc.ca.gov/deenergization/

I87-1: This comment serves as an introduction to the following comments. This comment is introductory and does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I87-2: This comment questions the proposed project's consistency with the Santee General Plan Land Use Element. Please refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I87-3: The comment expresses concern with home-to-home ignitions and mentions wildfires in California and Colorado as examples. These fires are not appropriate comparisons because of the differences in fire environment and particularly the community ignition resistance levels. For example, the Marshall Fire in Colorado is not a valid comparison for the project site for a number of reasons. First, the fire occurred in Colorado in grasslands. Second, the homes were not constructed to the same level of ignition resistance as California requires. In the Marshall Fire Operational After-Action Report, it is clear that the high winds were creating ember storms that ignited structures randomly (there was no ember protection in the structures). It was also inferred that defensible space was not maintained and fire did burn from wildland into the community. Neither of these would

occur at the project site. From an ignition resistance and fire safe perspective, it is not appropriate to compare the community in the Marshall Fire with Fanita Ranch. The communities are very different in terms of defensibility and the inclusion of layered, passive, and active protections. Cluster burns occur within clustered homes of older, more vulnerable construction that are close together. In fact, more dense development and clustering like the proposed project, with ignition resistant landscapes and buildings, is the preferred approach that results in less exposure to wildfire, easier defensibility, and safer firefighter environment (Syphard 2015). Cluster burns are less likely in a fire hardened community because (1) fire is set back from the developed areas by wide fuel management zone (FMZ); (2) landscapes are maintained and unfriendly to ember ignitions; (3) structures are protected from airborne ember penetration, the leading cause of structure damage/loss from wildfires, and structures are sprinklered, which would suppress or control an accidental structure ignition; (4) the shells of all structures provide extended timeframes for combustion and contain heat; (5) at Fanita Ranch there is a minimum of 10 feet between detached structures, with greater distances on sloped streets; and (6) the on-site fire station and other Santee fire stations can respond into the Project in a timeframe that is faster than it would take for a typical structure to become fully involved with fire to the point it could impact a neighboring structure.

I87-4: This comment is concerned with the project site being in a very high fire hazard severity zone and being subject to high intensity burns (FM-4). The concern regarding fire hazard severity zones is noted. However, the designation as a very high fire hazard severity zone does not exclude development. Rather, it requires a higher standard of fire protection, similar to a seismic hazard area requiring higher structural earthquake standards. The comments on chaparral are noted, chaparral at the site would not grow to the fuel volumes/biomass levels required to produce FM-4 due to the site's microenvironment and soils. FM-4 is a heavy chaparral fuel model with 6-foot-tall or taller fuels with 13 tons of total fuel per acre. The project site does not support this dense fuel, and more recently developed fuel models better capture the site's fuels, as presented in the Fire Protection Plan's (FPP) fire behavior analysis (Section 4). Refer to FPP Section 9 for a complete discussion of the updated fire behavior modeling compared to the 2007 modeling. The 2022 FPP utilizes FM-4 in specific areas where that type of fuel would occur at a climax condition when allowed to accumulate. The updated modeling resulted in worst-case flame lengths of approximately 66 feet in the site's heaviest fuels during extreme fire weather. The provided FMZs are at least twice as wide as the tallest modeled flame lengths. The northern portion of the project site receives increased FMZ and all of the ignition-resistant features that address the wildfire risks

I87-5 cont.

occurred across the state, including affected areas of Poway and Ramona.[2] If an ignition occurs during a PSPS that affects the project site, any portions of the site that require pumping for adequate water pressure would be adversely impacted. This is a significant impact that could disrupt the ability to fight a wildfire. The RFEIR has not disclosed and adequately considered the impacts of fires impacting the site during PSPS events authorized by the California Public Utilities Code Sections 451 and 399.2(a).

The RFEIR indicates that 21 lots in a portion of the northeast "Vineyard Village" are subject to inadequate pressure without private pumps, but has not considered the issue in the context of fire during a PSPS. What and where are the sources of power? If, batteries are utilized for back-up power, how will the batteries be protected from wildfire?

I87-6

Some of the Fuel Management Zones are extreme in relation to the 100 feet of defensible space standard. Expansive FMZs will be counterproductive when wind-driven embers or other sparks meet invasive fuels with lower ignition points than more ignition resistant shrubs. Invasive annual grasses that create a more flammable landscape increase the potential for erosion and impacts to wildlife. The shear size of the FMZs introduces a management burden that is impractical and unlikely to be kept to standard over time. And the FMZs would do little to diminish ember storms originating from adjacent vegetation and beyond.

I87-7

However, the RFEIR still significantly underestimates flame lengths for mature chaparral, which often exceed 100 feet. The 2007 Fanita Ranch Fire Protection Plan (FPP) acknowledged flame heights could be generated in excess of 100 feet.

I87-8

Steep drainages with burning chaparral will funnel heat through the topographic chimneys to the homes above/windward. Homes and roads located on ridge top saddles will receive the brunt of the energy discharged as the wind is squeezed and accelerated by the topography. Locating homes in these locations is **a significant impact to public safety.** It is especially significant because the proposed density of the project promotes structure-to-structure fire transfer.

Late evacuation over a ridge top road through a saddle with fire below would be deadly. The tendency is for the public to wait as long as possible before evacuating. Residents' denial can outweigh observable facts and lead to paralysis. Authorities recognize this problem. In the deadly Tubbs and Camp Fires, which occurred in Northern California in 2017 and 2018, respectively, authorities did not issue evacuation orders in some areas out of fear that it was too late.

I87-9

In the Camp Fire specifically, a perishing resident didn't evacuate with her surviving daughter precisely because an evacuation advisory was not issued to her or received by the time the daughter felt she must make a decision. The complicating factors of human psychology and challenges of communication merged into confusion and tragedy. Exercising responsible land use at the planning stage can avoid similar scenarios. The geography of "Vineyard Village" assures that authorities and residents alike must be able to make this same calculation and reach the correct conclusions. There is a long and

[2] https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/News_Room/NewsUpdates/2019/Nov.%2015%202019%20SDGE%20ESRB-8%20Report%20for%20Oct.%2020-Nov.%201%202019.pdf

2

most likely to result in structure fire—namely direct flame exposure and airborne embers. Based on the anticipated fire behavior, appropriate protections were included that result in a finding that the proposed project would not place the public or firefighters at significant risk.

I87-5: The comment expresses concern regarding power shut off by SDG&E during a wildfire and how that may impact the 21 residences that rely on a pump to achieve full water pressures. First, power shutoffs are limited in urban areas. SDG&E has the ability to focus areas for power shut off and these are areas where there is a high likelihood of vegetation making contact with energized transmission lines that could lead to the spread of fire into wildland areas. This is rare within urban areas like Santee. Regardless, if power was lost for any reason, the back-up (secondary) power source would engage and provide the needed water pressures. The backup power source alleviates the concern presented in the comment. However, even in the very rare possibility that the backup power source failed, there is still residual water pressure that would provide water availability. It would not be at 40 psi but still available to firefighters.

I87-6: The comment expresses concern that some of the FMZ areas are wider than needed and that embers will blow over them into the development. The FMZs are customized for this site and its fire environment. Expert fire protection

planners designed the FMZ to provide at least twice the setback as the longest modeled flame lengths adjacent to them. Therefore, in areas where the heavier native vegetation would occur, wider FMZs were provided. This is a prudent approach that provides defensible space for firefighters and sets wildfire far enough away from structures that heat and flame do not present issues. FMZs are not provided to address airborne embers. Embers are expected and have been addressed through ignition-resistant construction and the inclusion of special ember resistant vents in all structure openings. The vents are baffled to prevent embers from getting into attics and other spaces. Maintenance of the FMZ areas will prevent flashy fuels from becoming an issue, and the homeowners association, through a third party, is responsible for providing ongoing maintenance and inspections twice per year. FMZs are highly successful in protecting communities from wildfire encroachment.

I87-7: The comment quotes the 2007 Fire Protection Plan, which utilized an overly conservative fuel model (FM-4) and unverified wind inputs. FM-4 is a heavy chaparral fuel model with 6 foot tall or taller fuels with 13 tons of total fuel per acre. The project site does not support this dense fuel and more recently developed fuel models better capture the site's fuels, as presented in the 2022 FPP fire behavior analysis (Section 4). Refer to FPP Section 9 for a complete discussion of the updated fire behavior modeling

compared to the 2007 modeling. The 2022 FPP utilizes FM-4 in specific areas where that type of fuel would occur at a climax condition when allowed to accumulate. The updated modeling resulted in worst-case flame lengths of approximately 66 feet in the site's heaviest fuels during extreme fire weather. Differences in the modeling outcomes are related to wind speeds used in the modeling effort (the fuel moisture values used in both FPPs are the same). The 2007 FPP utilized 60 mph 20-foot wind speeds. The source of the wind speed data used in the 2007 FPP is not cited and is therefore unknown. The 2022 FPP utilized wind speed values established by San Diego County. These County standards identify appropriate wind speed inputs that are based on maximum recorded wind speeds and an analysis of 99th percentile wind speeds from local remote automated weather stations (RAWS). The peak wind values identified in the County standards (and used in the 2020 FPP) are the highest wind speeds recorded by a RAWS during the 2003 Cedar Fire.

I87-8: The comment expresses concern over specific topographic features that may accentuate wildfire intensity at the project site. Per the Recirculated Appendix P1, topographic features like chimneys, saddles, drainages, and chutes have all been analyzed and were part of the reasoning that resulted in extending the FMZs beyond 100 feet where the modeling and seasoned experience indicated it would be appropriate. The comment raises no

I87-9 cont.

growing list of public and firefighter fatalities that prove theoretical paper decisions are much more difficult in practice.

I87-10

A calculation to shelter or evacuate is complicated by variables beyond residents' ability to resolve prior to an event. The density of the development has designed overlapping Home Ignition Zones that make a cluster burn likely if one or more homes ignite due to human error (open window) or intense convective activity (a fire whirl or tornado). Residents that stay are placing a bet that thousands of their neighbors have not made an error that will impact them or that severe weather will not breach their shelters. The applicant has carried forward this flaw from 2007 and has now doubled-down on it.

I87-11

The RFEIR fails to adequately consider how evacuation of the project significantly impacts the feasibility of evacuating the established WUI with less fire resistant older homes. Virtually all of the homes on the existing WUI are highly susceptible to embers. Many homes would need to be evacuated as occurred during the Cedar Fire. A shift in wind direction that put these homes on the head of a wind-driven fire rather than the flank would result in lost structures when embers penetrate attic vents.

I87-12

How long does it take for an ignition from SR-67 and points east of San Vicente Reservoir to reach the project and how does that compare to time available for safe evacuation? The RFEIR is unclear and inadequate on fire rate-of-spread estimates.

I87-13

The RFEIR does not adequately consider the potential impact of concurrent incidents to the availability of emergency responders and how unavailability may impact evacuation and suppression operations. Special needs residents are at significantly higher risk when resources are unavailable.

I87-14

The RFEIR does not consider the increasing severity of wildfires due to greater frequency of extremes in weather and what this trend could mean in the short to longer term. How is a heating planet expected to modify BehavePlus input variables and the resulting calculations over short-term and longer-term durations?

I87-15

The City should also consider what increasingly harsh climatic conditions mean for maintenance of infrastructure over the long term. Insurance companies are an indicator, as they continue to cancel homeowner policies and exit California.

I87-16

Questionable developments in wildlands are stretching federal, state and local fire budgets to their limits. For example, USFS annual fire costs in the 1980's were under $200 million. Now they exceed 2 billion annually.[3] Cal Fire's average annual costs for the 1980's were $25 million. In the last decade those costs rose to $422 million on average.[4] These costs do not even consider the growing costs of injury, death, damage and destruction of property. The increasing demand for fire protection amounts to a subsidy from taxpayers for risky developments that would otherwise be economically infeasible.

[3] https://www.opb.org/news/article/wildfire-forest-service-budget-suppression-portion/

[4] https://www.statista.com/chart/19807/california-wildfire-emergency-fund-expenditure/

3

new issues that have not been adequately addressed in the Recirculated Sections of the Final Revised EIR, and therefore no additional response is required.

I87-9: The comment compares the proposed project with northern California fires. Please refer to the Thematic Response 4 – Fire and Evacuation, specifically subsection 4e, for details why comparing northern California wildfire events with an event at the project site is inappropriate, how evacuations are managed in San Diego County, how evacuation routes at the project site are different than the referenced fires, and the available option in many wildfire scenarios of avoiding a mass evacuation, surgically evacuating smaller populations and sheltering other populations on site. These options were not available to emergency managers in the referenced Northern California wildfires and invalidate comparisons between these substantially different fire environments.

I87-10: The comment expresses an opinion regarding the proposed project's ability to offer emergency managers with optionality, including sheltering in place, for some wildfire scenarios. The comment suggests that homeowners will decide whether to stay or evacuate. In fact, per Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, emergency managers determine the appropriate actions and notify the affected

populations through a multi-pronged approach. Regarding the comment's cluster burn suggestion, please refer to response to comment I87-3 for the reasoning why cluster burns are not anticipated at Fanita Ranch.

I87-11: The comment incorrectly states that the project's wildfire evacuation analysis has not considered the possibility that existing communities need to be evacuated. Per the Wildland Fire Evacuation Plan's analysis (Appendix D of Appendix P2), various scenarios were considered, with several including existing resident evacuations with and without simultaneous Fanita Ranch evacuation. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4b. Community vulnerability is one of the many factors that emergency managers will consider when determining evacuation areas and the most efficient procedures. It is possible that evacuating the existing communities may occur first in some wildfire scenarios with Fanita Ranch populations metered out slowly and utilization of the on-site sheltering as a way to minimize traffic congestion. Scenarios will vary and evacuations are very fluid. The optionality provided by Fanita Ranch aids evacuation management.

I87-12: The comment suggests that rates of fire spread are not considered. In fact, rates of spread may vary considerably under various weather conditions. Rates of fire spread would be evaluated during an actual event through real time situation awareness as evacuations are being

considered. The scenarios modeled in the Wildland Fire Evacuation Plan included Santee Fire Department input for scenario selection. These scenarios would enable phased evacuations. In other scenarios, such as an ignition off State Route 67, phased evacuations may be phasing internally to move perimeter populations to internal project areas or off-site while other proposed project populations are provided warning messages to prepare to take protective actions which may include remaining in their protected homes. Under this scenario, a focused relocation/evacuation may occur with most of the community sheltering in place because they are not threatened by the wildfire.

I87-13: This comment questions whether the availability of emergency responders was considered in the evacuation analysis. During a large, regional wildfire, or multiple wildfire events, the City assures response from its fire stations, including the on-site station. During a large wildfire, there would be multiple fire agencies providing resources, including CAL FIRE with its full complement of ground and aerial attack capabilities. San Diego County includes significant wildfire response resources with equally significant experience pre-planning, coordinating, and attacking wildfires that would all be available to the project area, as needed. Regarding special needs assistance, the Wildlife Fire Evacuation Plan utilizes the standard procedure, along with encouraging special needs

residents to have their own evacuation plans and persons who can help them in the event they are within an evacuation area. Moving special needs populations out of the area is not anticipated to be a significant issue during evacuations, especially with the on-site sheltering capabilities at Fanita Ranch, and would not rise to the level of a potentially significant adverse impact.

I87-14: This comment is concerned with the increasing severity of wildfires with extremes in weather. The commenter's opinion regarding a changing climate directly leading to trend of fire severity is noted. There have been wildfires throughout California's history, including some of the largest wildfires ever recorded. The environmental analysis conducted in connection with the proposed project (Appendix P2) considers climate change in the selection of fuel models and estimating worst-case conditions. It is speculative to assume that climate change will have a significant impact on wildfire behavior at Fanita Ranch. Some have argued that climate change will greatly increase the potential for wildfires, but new research has shown that there will not be as significant of an impact on southern California shrublands than is anticipated in the coniferous forests of the Sierra Nevada and northern California.[1] Indeed, the researchers demonstrated that drier conditions in California's forests

[1] Keeley, J., and A. Syphard. 2016. Climate change and future fire regimes: examples from California. Geosciences 6:37. 14pp.

will certainly increase potential for large, severe fires there; in Southern California shrublands, however, the impact will be significantly less, owing to the fact that the region already experiences a severe annual drought.

I87-15: The comment expresses an opinion regarding maintenance of infrastructure with a harsher climate and references insurance companies canceling policies. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. Therefore, no further response is required.

I87-16: This comment is concerned with the costs of fighting wildfires and increasing demand for fire protection. The comment raises economic, social, or political issues that do not relate to any physical effect on the environment and are beyond the scope of CEQA. Therefore, no further response is required.

I87-17

The RFEIR fails to consider the significant impact on the established WUI of abandoning the fuel load management prescribed in the 2007 FPP. Mitigation to harden the established WUI to ember intrusion should be required.

Without fuel load management, fuel loads will grow more hazardous and the significant impact of eliminating backfiring operations at the existing WUI as a suppression tactic becomes more significant. Timing is critical for success and firefighters must know that their firing tactic will not put others at risk. It is not feasible to backfire over routes potentially in use for late evacuation or the developed areas the routes are connected to. Fuel loads will grow, but a tool to eliminate the hazard during an actual incident has been removed by the site plan. At the same time, the project becomes a new source of potential ignitions to threaten the older home wildland interface.

Mitigation to harden the established WUI to ember intrusion should be required for this significant impact as well. Inability to reduce embers and manage the intensity of the main fire front with a properly timed backfire puts the established WUI at higher risk of loss of life and property.

I87-18

The RFEIR does not adequately consider:

- Various ignition points
- Multiple weather condition scenarios
- Onshore versus offshore wind-driven fires
- Periods when school buildings are occupied during the day or after hours by the community
- AM and PM commute hours and traffic gridlock
- Evacuation phases for different portions of the project
- Evacuation phases for different portions of the established WUI offsite
- Multiple simultaneous incidents throughout Southern California
- Cluster burns of structures
- Residents "in the direct path of a hazard."
- Specific safety zones and feasibility of specific escape routes to these zones
- Specific "predesignated temporary refuge areas"

I87-19

The RFEIR disseminates a false sense of security with confusing generalities in regard to critical decisions that must be made by public safety officials and the public itself on whether to evacuate or to shelter-in-place. Where/when are the trigger points for evacuation?

I87-20

The RFEIR does not consider the feasibility of implementing the FPP or the Evacuation Plan in the context of changing climate conditions with increased severity of wildfire threat to the project site.

I87-21

Of more specific relationship to the Fanita Ranch project site, it is important to understand that San Diego County is the location for four of the state's 20 deadliest wildfires. The Cedar Fire that swept over Fanita Ranch in 2003 ranks the fifth deadliest,

4

I87-17: This comment claims that the Recirculated Sections do not consider the impact on the wildland-urban interface (WUI) of abandoning fuel load management. The property is currently not providing ongoing fuel management beyond at the perimeter, adjacent to existing neighbors. Without the proposed project, this condition would continue. In its current condition, the property likely presents a greater hazard because of the fuels that occupy the large, vacant site. With the proposed project, a large portion of the property is converted to ignition resistant landscapes, altering fire behavior and spread across the site considerably and presenting a buffer for existing neighbors. Also, with the proposed project, the perimeter FMZ provided for the existing neighborhoods is conditioned to occur along with the project's FMZ maintenance, at least twice per year and as needed. Private property owners in the existing neighborhoods adjacent the site have known about the potential wildfire hazards at the site (in its current condition) for many years. As embers are the highest concern for these properties, property owners here, like anywhere, are responsible for taking actions to protect their properties. There are retrofits available for vents, roofs, and other vulnerable structure features that can provide a higher level of protection. The proposed project, which doesn't increase the hazards or overall wildfire risk for off-site neighbors,

may actually decrease hazards through its land conversion and focused FMZ.

I87-18: The comment suggests that the environmental analysis of wildfire and evacuation did not consider several factors. To the contrary, all of items noted were considered within in the Fire Protection Plan (Appendix P1) and Wildland Fire Evacuation Plan (Appendix P2). Please refer to these documents as well as to the Thematic Response 4 – Fire and Evacuation, sections 4a though 4e, and responses to comments O2-8 through O2-91 for details regarding: various ignition points, multiple weather condition scenarios, onshore versus offshore wind-driven fires, periods when school buildings are occupied during the day or after hours by the community, AM and PM commute hours and traffic gridlock, evacuation phases for different portions of the project, evacuation phases for different portions of the established WUI off site, multiple simultaneous incidents throughout Southern California, cluster burns of structures, residents in the direct path of a hazard, specific safety zones and feasibility of specific escape routes to these zones, and specific "predesignated temporary refuge areas."

I87-19: This comment claims the analysis is confusing on when decisions need to be made whether to evacuate or shelter in place. Regarding evacuations, trigger points would be established by the Incident Commander (IC) with the aid of wildfire situation awareness. Wildfire location, spread

rate and direction, along with advanced modeling occurring in real time inform the IC regarding trigger points. It is possible to establish trigger points prior to a wildfire, but their usefulness is best at the planning level as each wildfire is unique and would require trigger point adjustments in real time.

I87-20: This comment claims the project does not take into account climate change when considering wildfire threat. Please refer to response to comment I87-14 for analysis considering climate change.

I87-21: This comment discusses other major wildfires that have occurred in California. Of the large wildfires listed, it is not possible to equate property and lives loss to master planned, ignition resistant communities like Fanita Ranch. These wildfires impacted very large areas and many types and ages of structures and landscapes. It should be noted that continued development has the potential to actually reduce the risk of ignition of older developments that were not built with today's construction standards and codes[2]. While this would certainly not be the case if new communities were developed with old building codes, expansion of new development (built to increasingly stringent codes) could buffer older fire-prone communities. The City agrees with the comment that land use and public officials need to consider the project and its

[2] Dicus, C.A., N.C. Leyshon, and D. Sapsis. 2014. Temporal changes to fire risk in disparate WUI communities in southern California, USA. Pgs. 969-978 In Viegas, D.X (Ed.). Advances in Forest Fire Research. University of Coimbra Press. ISBN 978-989-26-0884-6.

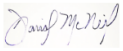
I87-21 cont.

I87-22

killing 15.[5] The Cedar Fire destroyed 2,820 structures and ranks the 4th most destructive.[6] The Cedar Fire burned 273,246 acres. It was the largest in California history until the record was broken in 2017 by the Thomas Fire in Santa Barbara and Ventura counties and broken again in 2018 by the Mendocino Complex. Broken again by the August Complex in 2020. Broken again by the Dixie Fire in 2021. Eighteen of the state's 20 largest fires have occurred since the ignition of the Cedar Fire.[7] These sobering facts demand that extreme caution be exercised by land use authorities and public officials when considering whether to permit additional development in wildland-urban interface zones.

In conclusion, it is my expert opinion the RFEIR has failed to disclose, avoid and mitigate the significant adverse wildfire public safety impacts associated with the proposed Fanita Ranch development project.

Sincerely,



David McNeil

Retired. Community Development Planner, Douglas County, NV. Firefighter, CDF and USDA-Forest Service. Biomass-to-Energy Fuels Management Coordinator, Nevada Governor's Office of Energy.

[5] https://www.fire.ca.gov/media/lbfd0m2f/top20_deadliest.pdf

[6] https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf

[7] https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf

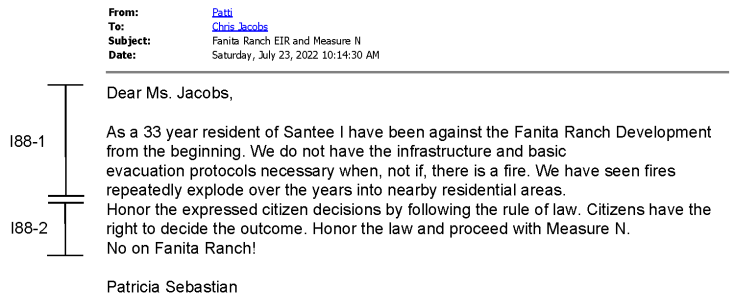
5

fire protection system when developments are proposed in fire hazard severity zones. Projects that are analyzed and incorporate a customized protection system are approvable and will result in a fire safe community.

I87-22: The comment expresses an opinion that the Recirculated Sections do not avoid significant impacts on wildfire, which is not substantiated by evidence. Therefore, no further response is required.

Comment Letter I88: Patricia Sebastian, July 23, 2022

I88



From: Patti
To: Chris Jacobs
Subject: Fanita Ranch EIR and Measure N
Date: Saturday, July 23, 2022 10:14:30 AM

Dear Ms. Jacobs,

I88-1 As a 33 year resident of Santee I have been against the Fanita Ranch Development from the beginning. We do not have the infrastructure and basic evacuation protocols necessary when, not if, there is a fire. We have seen fires repeatedly explode over the years into nearby residential areas.

I88-2 Honor the expressed citizen decisions by following the rule of law. Citizens have the right to decide the outcome. Honor the law and proceed with Measure N.
No on Fanita Ranch!

Patricia Sebastian

I88-1: This comment states that the commenter opposes the proposed project due to inadequate infrastructure and evacuation protocols during a fire. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire.

I88-2: This comment supports Measure N. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I89: Belluto51, July 24, 2022

I89

From: MAIL SECURITY ALERT
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 8:15:14 AM

I89-1

I am a home owner in Santee. My property is right below where you are planning on building Fanita Ranch housing. I strongly oppose this development as it will increase traffic, and take away the beautiful area where deer and other wildlife live. Please do not ruin this beautiful free area with more houses and traffic in Santee.
Sent from Mail for Windows

I89-1: This commenter opposes the proposed project due to traffic and wildlife impacts. The City acknowledges that the comment letter expresses opposition to the proposed project and does not raise any issue concerning the adequacy of the Recirculated Sections of the Final Revised EIR. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims regarding traffic and wildlife.

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Comment Letter I90: Vicki Call, July 24, 2022

I90

From: vicki call
To: Chris Jacobs
Subject: RE: Fanita Ranch Final Revised EIR (SCH# 2005061118)
Date: Sunday, July 24, 2022 11:04:47 PM

Dear Mr. Jacobs,

In 2003, my aunt and uncle (both 78 years old) were given a 10 minute warning to evacuate their home in Crest due to a fast moving fire (I believe they named it the Cedar fire). A sheriff's helicopter broadcasted the warning tothe neighborhood. 10 MINUTES. They had just enough time to grab their two tortoises, two pug pups, and a folder with important documents (my aunt was an exceptionally organized person, and they had had previous experiences where they had to evacuate due to fire). That same fire caused me to temporarily evacuate my condo near Magnolia and Mast Blvd. A sheriff knocked on my door and said it was a 'voluntary evacuation'. I took the warning seriously, called family members and we packed up as much as we could and stayed at my mom's in El Cajon. The fire came as close as the bottom of the foothills of Santee. I later found out through friends, that homeowners were helping to fight the fire because it was so fast moving that the firefighters were overwhelmed. The fire spread as far west as Scripps Ranch and destroyed over 2200 homes, along with numerous commercial properties and outbuildings. The wind kept changing directions, therefore, the fire kept changing directions. Firefighters were back and forth trying to get things under control. The power was out in all of Santee. You couldn't cook, you couldn't go to a restaurant because they were all closed. The air was filled with smoke and ash for days and then weeks later, you could still see the ash in the street when cars drove by and disturbed it. I90-1

The witch creek fire started on Sunday, Oct. 21, 2007 after Santa Ana winds blew down a power line. It spread quickly through San Diego Country Estates, Ramona, Rancho Bernardo, Poway and Escondido. Over 1100 homes were destroyed. Who would think that a fire could travel that far? Cover such a distance in so short a time? We must not forget.

Last Thanksgiving, I was with family and friends, getting ready to have our meal, when I received a text on my phone that the SD Sheriff issued an evacuation warning due to wildfire, directing people to the Pathways church on Carlton Hills. The winds that day were horrific. I knew from previous experience, that fire could spread rapidly. I rushed home and packed a few things. NONE OF MY NEIGHBORS DID ANYTHING. THEY DID NOT TAKE THE WARNING SERIOUSLY. As it turns out, the fire was along the riverbed, and firefighters were able to extinguish it before any real damage was done. There were videos on the news that evening of residents using garden hosesto fight the fire (prior to firefighters arrival). It was like spitting on the fire. You could tell it wouldn't have worked if things got bad.

These are all reminders FOR ME, of how dangerous fire can be. No one can predict a set of circumstances that could occur in a fire emergency. You have the possibility that people will not take an evacuation warning seriously, or that people will panic. An evacuation could be delayed because most people will try to salvage AT LEAST SOMETHING (wasting precious time, and possibly causing increased gridlock along the evacuation route), before getting into their vehicle to escape the fire. What if firefighters are fighting a fire in an other area? What if there are multiple fires? It has been known to happen. How close together will the houses be? In most housing developments these days the homes are just a few feet apart. If one catches fire, it puts all nearby homes at risk. Also, seems to me if people in Fanita Ranch have to be evacuated, it's pretty likely their homes will be in danger before mine because of their location. Will those evacuees prevent me and my neighbors from getting out if it becomes necessary for us to evacuate? Will their homes cause our homes to be threatened because they are providing more fuel for the fire? I90-2 I90-3

It's getting hotter every year folks. It's getting dryer in San Diego. Has it occurred to anyone that there is a possibility firefighters could actually run out of water to fight a fire? I90-4

The determination by the City Council and others to approve this project no matter what, reminds me of the 'salesperson' vs the 'technician'. The salesperson will tell you anything to get you to buy whatever he/she is selling. The technician is the one you call when things go wrong. He/She will tell you the truth about the product. This all comes down to 'responsibility'. Who is going to be responsible to ensure the safety of our citizens? Do we have I90-5

I90-1: The comment provides personal memories of the 2003 Cedar Fire, the 2007 Witch Creek Fire, and a 2021 riverbed fire. The comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections. Therefore, no further response is required.

I90-2: The comment states that no one can predict circumstances that could occur in a fire emergency, and provides opinions regarding wildfire and evacuation responses by those receiving evacuation notices, including the opinion that people will choose to ignore evacuation notices or panic. The Wildland Fire Evacuation Plan (Appendix P2) explains that generally speaking, while "citizen reactions may vary during an evacuation event, . . . several studies indicate that orderly movement during wildfire and other emergencies is not typically unmanageable. Evacuation can be made even less problematic through diligent public education and emergency personnel training and familiarity" (Wildland Fire Evacuation Plan (Appendix P2), Section 6.5). Emergency responders will manage evacuations in compliance with the current County/City Annex Q (Evacuation) and the 2020 City of Santee Emergency Operations Plan (City EOP), which provide a playbook to be used in the event of an emergency and incorporate several means of reducing fear and panic

levels, including though providing effective notifications, directives, and information from credible sources, and providing coordinated assistance for individuals with special needs. (*Ibid.*) Emergency personnel are further trained to address anxious and panicking residents during an evacuation scenario. (*Ibid.*) The history of wildfire evacuations in San Diego County show evacuations have been safe and effective through implementing these plans.

The proposed project's Wildland Fire Evacuation Plan (Appendix P2) has been prepared to increase resident preparedness and facilitate an efficient and rapid evacuation of the proposed project in the event of a wildland fire. The Evacuation Plan is consistent with the County EOP and City EOP, which serve as the roadmap for emergency response, including wildfire emergencies, in Santee. The modeling and analysis portion of the Evacuation Plan is focused on ensuring that the proposed project and surrounding community can be evacuated within a reasonable time frame, and that contingency plans are available to emergency managers. Wildfire evacuations from the site would be focused on early relocation from the proposed project site long before a fire would threaten the proposed project or its access routes. Evacuations would follow the "Ready, Set, Go!" model, which is the model adopted by most emergency agencies in California. The proposed project provides roadway FMZs to better protect those residents that may evacuate

late. The proposed project would also provide emergency decision makers with the contingency option of temporarily refuging people on-site, in their homes, at the designated Village core areas, or other protected spaces that would be available in the proposed project's developed areas. These areas may be determined to be safer than evacuating in some fire scenarios, including in the context of late evacuations. Refer to Section 3.1.6 of Fire Protection Plan (Appendix P1), which describes methods to ensure safety where residents ignore evacuation declarations.

The comment asks specific questions concerning fire response. Regarding the comment's specific questions: (1) if Santee firefighters are involved with a fire in another area, there would be backfill engine companies at key stations. SFD would not leave its stations without coverage. Also, there are automatic aid agreements that would send firefighters from other jurisdictions to assist, if needed. Further, with wildfire, CAL FIRE would send resources, depending on the wildfire's size and potential, and may include significant resources and aerial firefighting resources; (2) if there are multiple fires, significant firefighting resources would respond through the automatic and mutual aid programs; (3) the detached homes in Fanita Ranch are no closer than 10 feet apart and on sloped roads, are at greater distances; (4) the likelihood of the described home to home ignitions is considered low.

This comment describes the possibility of cluster burns, which can happen within clusters of homes within older, more vulnerable construction that are close together. In fire hardened communities like the proposed project, more dense development, with ignition resistant landscapes and buildings, is the preferred approach that results in less exposure to wildfire, easier defensibility, and safer firefighter environment (Syphard 2015). Regarding large fires or other large-scale incidents outside of the central zone, internal policies would only allow commitment of a limited number of units in order to maintain coverage within the zone. In the event an incident within the zone were to commit most units in the immediate proximity to the incident, an internal "move-matrix" is utilized which will re-locate units from around the zone and neighboring zones to cover stations in order to maintain adequate coverage throughout the affected area. This system is used often and works well for SFD. For extended incidents, an internal fire department "call-back" procedure is used to call-back off-duty firefighters to staff reserve apparatus. This is done through an automated system which notifies all personnel simultaneously via cellular notifications. Single unit call-backs are done frequently while large scale incidents may order all off-duty personnel report back to their stations, which was initiated during the Cedar Fire.

Cluster burns are less likely in a fire hardened community like the proposed project because: (1) the fire is set back

from the developed areas by wide FMZ, (2) landscapes are maintained and unfriendly to ember ignitions, (3) structures are protected from airborne ember penetration, the leading cause of structure damage/loss from wildfires, and structures are sprinklered which would suppress or control an accidental structure ignition, (4) the shells of all structures provide extended timeframes for combustion and contain heat, (5) there is a minimum of 10 feet between detached structures, with greater distances on sloped streets, and (6) the on-site fire station and other Santee fire stations can respond into the proposed project in a timeframe that is faster than it would take for a typical structure to become fully involved with fire to the point it could impact a neighboring structure. Refer to Fire Protection Plan (Appendix P1), Section 2.2.8 and 3.1 for additional information.

I90-3: The comment questions whether Fanita Ranch resident evacuation would prevent the commenter and the commenter's neighbors from evacuating. As addressed in the Wildland Fire Evacuation Plan (Appendix P2), there are scenarios where the proposed project may be evacuated, but the focus will be on a surgical evacuation process that moves smaller populations either to on-site refuge areas or off site, depending on the wildfire, its movement, and related factors. Large evacuations of the project site would also be carried out in a phased approach, to reduce the number of vehicles added to the evacuation

routes and spread them over time. Large scale evacuations are more likely during a wildfire like the Cedar Fire, that is approaching from several hours away, whereas a fire that starts closer would be anticipated to include a different approach, where perimeter populations on the wildfire-facing edge would be relocated, with subsequent relocations or evacuations occurring only as-needed. Emergency management personnel managing the evacuation will focus on ensuring street availability and traffic movement can occur for populations that are at risk. If the commenter's population is considered at risk from a wildfire, they will be moved out of harm's way while other populations at lower risk, are held in place. For more information on evacuation scenarios, refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4b which discusses types of evacuations and evacuation modeling for the proposed project.

The comment also asks whether the proposed project will cause existing homes to be threatened because they are "providing more fuel for the fire." To the contrary, the proposed project would reduce vegetative fuels. With the proposed project's redundant fire protection system including extensive FMZs, an on-site fire station, FMZs for roadways and neighboring properties, hardscape, irrigated landscaping, and fire hardened construction, the proposed project is considered to act as a "fire break" and benefit both existing area residents and those who will

populate Fanita Ranch. The Fire Protection Plan (Appendix P1) further explains in Section 3.1.6:

If all communities focused on shelter in place capability, similar to Stevenson Ranch and Fanita Ranch, most or all fire resources could focus on fire control instead of structure defense (Foote 2004). Thus, not only could residents shelter-in-place safely while fire burns around the community, fire resources could be directed toward better controlling and fighting the fire as the community acts as a "fire break." Further, first responders could utilize resources to focus their efforts on defense of less fire-resistant communities.

I90-4: The comment posits that there may be a future condition where firefighters could run out of water as the climate gets hotter and drier. This comment is speculative, absent substantiating evidence, and beyond the scope of the Recirculated Sections. The Final Revised EIR, Section 4.17, Utilities and Service Systems, concluded that adequate water supply is available to serve the proposed project. Refer to Thematic Response 1 – Recirculation and Scope of Review Claims. As described in the Recirculated Sections, the proposed project requires installation of a public water system for fire protection and system reliability. See Fire Protection Plan (Appendix P1), Section 3.3.7. The availability of water for firefighting is a high priority and is anticipated to continue to be a high priority. In addition to hydrants, surface water sources are

also available for firefighting, including ponds, pools, lakes, and the ocean.

I90-5: The comment poses several questions concerning equipment and staffing, responses to which follow:

(1) The number of firefighters for a given jurisdiction is based on the population and its generated call volumes as well as geographical layout. As detailed in the Fire Protection Plan, Appendix P1, with the on-site construction of a new fire station and funding of personnel, the larger community will have an appropriate number of stations and fire and medical response resources.

(2) SFD includes the type of equipment/resources to respond to the types of emergency calls they receive.

(3) Please refer to response to comment I90-2 regarding automatic and mutual aid as well as CAL FIRE response to wildfires.

(4) If a wildfire occurs before completion of the Magnolia Avenue extension, the same considerations would be enacted to manage an evacuation as are detailed in the Wildland Fire Evacuation Plan (Appendix P2). There would still be the ability to move targeted populations out of the area via two major and fuel modified access routes, Fanita Parkway and Cuyamaca Street, with numerous existing connections to present day Magnolia Avenue. The contingency option of on-site sheltering/refuge at

I90-5 cont.

enough firefighters? Do we have the necessary equipment? From time to time our firefighters are called away from San Diego to assist in an other area. What if a major fire happens when we are short staffed? What if a fire occurs before Magnolia Street is extended? What if there is construction going on near an evacuation route? So many questions.... Fire season is nearly year round these days. We must always consider the possibility that it can happen.

I90-6

Below, I am repeating the letter I sent previously, stating my opposition to the Fanita Ranch Project.

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents. I am so disappointed to see that at the lowest level of government, there are lies and deceit. Those of us who live in Santeehave spoken, yet our 'leaders' continue to ignore the wishes of the people. This is supposed to be the government of the people, by the people and for the people. Really?? I don't see that happening. MOST Santee residents are opposed to Fanita Ranch, and they have expressed their sentiments via the thousands of signatures on petitions that were submitted in order to qualify for a place on the ballot. Now you propose to stop the vote from happening on the November 2022 ballot? Shame on you.

I90-7

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI). You all and others who believe Fanita Ranch is good for Santee should take a drive through the Weston development across from West Hills High School. As you enter the project, the road is nice and wide. A little further in, there are houses only on one side of the street, so the road is wide enough fortwo cars going in opposite directions to pass each other. A little further in, there are houses on both sides of the street and there are cars parked along the entire street. In order to two cars to pass, one must move over to let the other go by. Two cars cannot travel freely in opposite directions. There is ONE main road in and out of the Weston development. That road goes back into the hillside for MORE THAN A MILE. Tell me how people in a panic are going to get out safely? At one of the city council meetings I attended where all the experts were testifying on behalf of Fanita Ranch, the fire expert said they have the capability to notify people to evacuate section by section. Even Rod McNellis questioned this. When people are in a panic, an orderly evacuation is out of the question. The other issue is water for all. The water expert said there would be enough water for all. And here we are in 2022, in a severe drought, again being asked to conserve water.

I90-8

I90-9

The latest development on Magnolia Ave. across from Walker Preserve is being built right on the riverbed. In the late 70's, that entire area was flooded. The least expensive home in that project (I believe is 67 homes) is just under ONE MILLION DOLLARS! Check it out. Others are over ONE MILLION DOLLARS. The 'yards' are barely the size of a patio. Why would a developer provide yard space to a family with children, when they can build morehomes and pocket more money. Where will the children play? Do you guys think of this at all when you approve housing project after housing project in our little city? No wonder our children are hooked on video games. When we were kids, we went outside to play. We had plenty of SPACE. Our parents didn't have to take us to an INDOOR PLAYGROUND, or drive to a park. We had a nice yard with a few trees, a swing set, a kiddie pool, etc.
You could have fun in your own back yard. AND, if you were lucky enough, as we were, you had an empty lot next door to build forts with cardboard, string, duct tape and sticks or tree houses with scrap wood. Oh the good old days. I feel for the children of today, that many won't have the opportunity to connect with nature as we did. A lacking of vitamin N (nature) in their lives.

My wish is that you would not make MONEY the bottom line for every decision you make. Think of the quality of life of the people you represent NOW. We are the ones who placed the responsibility of our town's welfare in your hands. Fanita Ranch is not good for Santee in so many ways. It is good for the tax dollars it will bring to city coffers. Is that the bottom line? I am so disappointed in all of you.

Thank you,

Vicki Call

designated locations would also still be a viable alternative, if considered safer than evacuation. Note that the CR Associates evacuation time travel analysis, Appendix D to the Wildland Fire Evacuation Plan (Appendix P2) considered evacuation time for the proposed project both with and without completion of the Magnolia Avenue extension in Scenarios 2 and 3 of that memorandum.

(5) During construction, there will be plans to ensure that evacuation options are available at all times. Refer to Appendix H, Construction Fire Prevention Plan, of the Fire Protection Plan (Appendix P1).

I90-6: The City acknowledges the comment expresses general opposition to the proposed project, but does not raise any issue concerning the adequacy of the Recirculated Sections. The comment also addresses the referendum petition concerning the previously approved general plan amendment associated with the previously approved Fanita Ranch project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability.

I90-7: The City acknowledges the comment expresses the opinions of the commenter concerning fire risk and opposition to the proposed project, but does not raise any issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections. As to

evacuation and fire safety, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4d**.** No further response is required.

I90-8: The comment describes another residential development, known as Weston, its access, and speculates regarding the safety of that project. The comment does not raise issues regarding the adequacy or accuracy of the proposed project's EIR, and therefore no further response is required. For informational purposes, the City refers the commenter to Evacuation Plan for the proposed project and Thematic Response 4 – Fire and Evacuation, subsections 4a through 4e**.** The proposed project is not comparable to the Weston development, as it is described in the comment. The proposed project's internal roadways and off-site travel routes would be fuel-modified passageways. Internal streets would provide residents the option to evacuate from at least two points in two different directions from each neighborhood. The roadways are designed to meet or exceed the Fire Code requirements, including unobstructed travel lane widths consistent with the Fanita Ranch Development Plan standards, unobstructed travel lanes, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, etc. Two external points of ingress/egress are provided to/from the proposed project – Fanita Parkway and Cuyamaca Street – which can be used for a combination of evacuation and emergency access. Refer to Section 3.2 of the Fire

Protection Plan (Appendix P1) for additional detail. Please also refer to response to comment I90-4 for response on water availability and response to comment I27-4 concerning accounting for and managing panic response.

I90-9: The City acknowledges the comment expresses general opposition to the proposed project and provides concluding remarks but does not raise any issue concerning the adequacy of the Recirculated Sections. To the extent the comment inquires about the proposed project's plans for recreation and parks, please refer to Chapter 3, Project Description, of the Recirculated Sections. Proposed project impacts to recreation were evaluated in the Final Revised EIR, Section 4.15, Recreation, and are not at issue in this corrective action. Refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For that reason, the City provides no further response to this comment.

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Comment Letter I91: Dan Delgado, July 24, 2022

I91

From: Dan Delgado
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 3:06:59 PM

Dear Mr. Jacobs and City Council,

I91-1 The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan. City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I91-2 Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,
Dan

I91-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I91-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I92: Erin Doherty, July 24, 2022

I92

From: Erin D.
To: Chris Jacobs
Subject: Fanita Ranch/City Council Concerns
Date: Sunday, July 24, 2022 9:42:06 PM

I92-1

Hi,

My name is Dr. Erin Doherty, I am writing about the latest possible decisions on Fanita Ranch. I would like my concerns passed on to the City Council and those that decide the fate of Fanita Ranch. I was told you are a contact point.

I am not sure where you are in the process or if this is again coming up on another City Council decision, but I would like my concern logged in whatever aspect that can occur.

I92-2

1. Citizens collected thousands of signatures to send Fanita Ranch to another public vote. It seems that the City/Council is trying to circumvent these signatures and wishes. It seems like the City listens to the developer and not voters. This is poor character on the part of the city. It makes us residents feel there are unethical things transpiring between the City and the developer. This is not okay. This makes us not trust the City Council at all or those who work for the City of Santee. Please allow this to go to a vote.

2. There was a new "evacuation plan" supposedly made. Well, if so, still send this to a vote. If it is "good enough," then the City should residents can get a vote on it, just like a democracy calls for.

I92-3

3. Fix the infrastructure in this city first before you bring in 3,000 homes! Traffic can back up at intersections on Cuyamaca/Mission Gorge for blocks with a red light. How do you plan to fix this with 3,000 homes first? If you want residents to be okay with 3,000 homes, fix the roads and infrastructure first.

4. The 52 Freeway can't even handle the morning and evening commute. Fanita Ranch DOES NOT GUARANTEE expansion of the freeway though Santee, the developer has been very "crafty" with their commercials and advertisements. Don't bring in 3,000 homes until you fix the freeway issue. The quality of life of sitting on a freeway for 45 minutes on a morning commute is sickening already. Fix this first before you bend over to a developer to hit it rich off some home sales.

I92-4

5. This area has been designated as a high-risk fire zone by CalFire and numerous other entities. Does this matter to anyone? Would you even be pushing for this development if HomeFed weren't pushing it? In the end, if HomeFed gets to build these houses and make lots of money off of it, they basically "dump" a problem of overcrowding on Santee, while us residents get to put up with it for years. They don't have to deal with the traffic, fire-risk, sitting at endless traffic lights to make it around town. They are here for the profit, not for the best interest of Santee residents long-term.

I92-5

In the end, listen to the voters, you guys work for us. Yes, we need more housing in Santee. I am fine with more housing, not 3,000 homes in a clump in a fire zone without fixing the infrastructure.

Please pass this forward to the rightful place. We as residents are tired of the "sneaky" tactics

I92-1: The commenter would like their concerns passed on to the City Council. The comment letter and responses will be included in the Final Recirculated Sections of the Final Revised EIR to be considered by the City Council. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I92-2: This comment supports a public vote on the proposed project and mentions a new evacuation plan. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. A new Wildfire Evacuation Plan was prepared and recirculated as part of the proposed project and is included as Appendix P2.

I92-3: This comment refers to current traffic conditions on City roads and State Route 52. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section

I92-5 cont.

the City/Council does to try and get this development in. Many of us wonder how many pockets are being lined in order to push the agenda of these homes, which many residents do not want.

Again, we are for growth, but, properly-planned, voter-approved growth. Stop ignoring the voices of the people who pay your salary to represent us.

Thank you,

Dr. Erin Doherty
Santee resident of 19+ years.

15088.5(f)(2). Therefore, no response is provided regarding the project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

I92-4: The comment states that the proposed project is located in a high fire hazard severity zone and will present a fire risk. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk.

This comment also provides the commenter's opinion regarding the project developer, which does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I92-5: This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Please refer to response to comment I92-4 regarding the project location in a fire zone, I92-2 regarding voting, and Thematic Response 1 – Recirculation and Scope of Review Claims regarding infrastructure.

Comment Letter I93: David Dugger, July 24, 2022

I93

From: David Dugger
To: Chris Jacobs
Subject: Fanita Ranch Revised Environmental Impact Report
Date: Sunday, July 24, 2022 2:06:28 PM
Attachments: Fanita Ranch EIR Comments David Dugger.pdf

Dear Mr. Jacobs,
Attached are comments on the Fanita Ranch Revised Environmental Impact Report.

Sincerely,
David B. Dugger

July 24, 2022

Mr. Chris Jacobs, Principal Planner
Department of Development Services
10601 Magnolia Avenue
Santee, CA 92071
Email: cjacobs@cityofsanteeca.gov

Subject: Fanita Ranch Revised Environmental Impact Report

Dear Mr. Jacobs,

I93-1 As a former Cal Fire Defensible Space Inspector, please consider my comments on the Fanita Ranch Revised Environmental Impact Report, Appendix P2. Wild Fire Evacuation Plan and Appendix D wildfire sections. My experiences as both a fire inspector and educator provide unique insight into the specific issues of defensible space, wildfire evacuation and public ability to prepare for wildfire emergencies.

I93-2 The Evacuation Plan includes and heavily relies upon voluntary educational outreach. Voluntary outreach efforts are important, but have significant limitations. Levels of interest in and comprehension of the subject matter vary widely. Many individuals possess a mindset that a fire emergency is likely for someone else, but not for me. So the information provided is not readily digested and put into motion. This is a significant limitation of the Ready, Set, Go! materials that I introduced to thousands of individuals during my defensible space inspections.

I93-3 Many individuals will never visit the list of websites the Evacuation Plan provides. Similarly, consider that most individuals do not complete self-study courses they initiate without a high level of motivation and interest. Many others are simply unavailable or choose not to participate at all for various reasons.

I93-1: The comment is an introduction to comments that follows and provides commenter past employment information as an educator and CAL FIRE defensible space inspector. It should be noted that CAL FIRE defensible space inspectors receive training on identifying potentially hazardous fuel conditions in the field. According to CAL FIRE's published position description, this training does not include a focus on project fire safe planning, fire and building codes (other than defensible space related topics as set forth in California Public Resources Code, Section 4291), California Environmental Quality Act (CEQA), or evacuation planning/modeling.

I93-2: The comment expresses the commenter's opinions regarding the Wildland Fire Evacuation Plan's (Appendix P2) inclusion of educational outreach and materials. Contrary to the comment's assertion that the outreach program is "voluntary," the Wildland Fire Evacuation Plan (Appendix P2) and Fire Protection Plan (Appendix P1) prepared for the proposed project require ongoing outreach, and these will be enforceable conditions of approval. Any given population will include a variety of levels of evacuation/wildfire awareness and willingness to prepare. The goal of the Wildland Fire Evacuation Plan (Appendix P2) is to raise the awareness and preparedness of the population through ongoing education such that the

majority of the population will have a working knowledge of evacuation procedures. If the homeowners association (HOA) were to provide a one-time education opportunity, it is likely that the goal would not be achieved. However, the HOA will be committed to ongoing outreach, workshops involving the Santee Fire Department, website focused on readiness, and regular outreach that keeps wildfire and evacuation/Ready, Set, Go! as important facets of Fanita Ranch residency.

I93-3: Please refer to response to comment I93-2 regarding the approach to public outreach at Fanita Ranch. The fact that some of the population will not prioritize evacuation is considered in the proposed project analysis and would not impede the successful evacuation of the proposed project. The population unfamiliar with evacuation protocol would nonetheless receive direction in automated messaging and other communication systems, and will naturally follow those who are familiar with the procedures. This is similar to how evacuations in San Diego County have safely occurred for the last 25 years or more but improves upon prior evacuations based on lessons learned. Refer to the Wildland Fire Evacuation Plan (Appendix P2) and Fire Protection Plan (Appendix P1), Sections 3.1.5 and 3.1.6. Modern evacuations include detailed messaging via automated alerts, social media posts, television and radio direction, as well as, in many cases, on the ground personnel directing traffic. The evacuation approach is a

I93-3 cont.

In my professional judgment, Ready, Set, Go! and other educational fire materials which I provided to homeowners are beneficial to generate discussion, but are completely inadequate as partial justification for creating new vulnerable populations on high risk topography. The Evacuation Plan reliance on this approach is a significant deficiency.

I93-4

The Evacuation Plan also significantly mischaracterizes Ready, Set, Go! by its direction for home security prior to leaving the home. Doors and window should be closed, but not locked. Immediately threatened firefighters or residents gridlocked by failed evacuation routes may require entry to a home as temporary refuge and then need entry to another structure should the occupied shelter ignite.

I93-5

Defensible space also has significant limitations. Well-maintained defensible space usually makes a structure likely to survive a fire during **average** weather conditions. As fire behavior increases the duration of wind-blown embers, the probability of a given structure's survival decreases, especially with convective activity that may batter widows or other vulnerabilities with lifted objects or debris.

For example, 34 homes in Alpine during the West Fire July 6, 2018 were lost during a period of above-moderate weather with NE erratic winds generated from more distant thunderhead formation. Hardened homes with textbook 100 feet of defensible space and beyond were subjected to wind-borne embers aligned to attic vents resulting in ignitions. I personally did site damage review with a team of San Diego Unit Defensible Space Inspectors at this incident.

The effectiveness of defensible space can also be compromised by the items homeowners purchase and store outside of their homes, including patio furniture, barbeques, propane fueled heaters, recreational vehicles, toys, miscellaneous clutter, etc.. These items and landscape vegetation fuel loads tend to accumulate over time even in HOA governed developments. Natural aging and wear and tear with use will increase wildfire vulnerability over time.

2

holistic and does not rely solely on any one component, including outreach programs, for successful evacuations. The public education and outreach program nevertheless is an important tool, above and beyond what is offered by most communities.

I93-4: The comment states that the Wildland Fire Evacuation Plan (Appendix P2) significantly mischaracterizes Ready, Set, Go! by its direction for home security prior to leaving the home, and suggests this precludes using homes for temporary refuge on site. Securing one's home is a nearly automatic response when leaving and is why the Wildland Fire Evacuation Plan (Appendix P2) recommends this action. Most evacuating residents will be wary to leave their home unlocked. This recommendation does not contradict the general and broad guidance of the Ready, Set, Go! Program, which process is intended to get residents ready and prepared to undertake an evacuation. Further, this recommendation in the Wildland Fire Evacuation Plan (Appendix P2) will not result in an unsafe situation for residents or firefighters. The most likely evacuations will occur long before fire arrives. If this is not possible due to an ignition near the project site, some populations may be directed to on-site areas internal to the site or the Fanita Commons Village Center or directed to remain in their protected homes. Refer to Section 3.1.6 of

the Fire Protection Plan (Appendix P1). Contrary to the comment, it is not the case that residents' homes are intended to be left open and available to any resident to seek shelter in another person's home in the case of a shelter in place or temporary refuge scenario. If a firefighter were to need access, they have the tools to open locked doors readily. Further, firefighters will be able to refuge on the lee side of almost any structure or in any street in the project. There are no readily anticipated scenarios where a firefighter would have to seek refuge within a private residence. Other options are available throughout the Fanita Ranch that are devoid of vegetative and readily ignitable fuels.

I93-5: The comment states the commenter's opinion regarding defensible space and its limitations regarding airborne embers. The comment ignores the extensive analysis in the Recirculated Sections of the fire hazards to homes during a wildfire and how they are addressed, including regarding the extensive fuel modification zones (FMZs) designed based on an extreme fire scenario (not a typical fire scenario/average weather) and project features to minimize structural ignitions from airborne embers. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d, and the Fire Protection Plan (Appendix P1) for a comprehensive discussion of the fire protections customized for the proposed project based on its location and modeled fire behavior.

I93-5 cont.

The photograph documents a Chapter 7A standard constructed Alpine home burned in the 2018 West Fire during above-moderate weather conditions despite well-maintained defensible space beyond 100 feet. The home had the misfortune of an attic vent directly aligned with penetrating wind-blown embers. Lot spacing prevented house-to-house fire spread as documented in other high-density wildland-urban-interface development fires.

I93-6

Significant Vulnerability of Proposed High Density Development

The project fails to avoid significant wildfire risk by non-compliance with the larger lot size requirements of the Santee General Plan. Homes spaced outside of Zone1 relative to each other can significantly reduce the probability of structure-to structure-fire-spread by direct flame impingement and radiant heat. It is possible for the project to avoid the significant risk of ignition and structure loss from

3

This comment provides an image of a burned structure and claims that it is a "Chapter 7A standard" constructed building. The home shown was not fitted with specialized, baffled vents like the proposed project would be, which are tested to exclude ember penetration into attic and other internal spaces. Had the structure been fitted with these vents, it is not likely that it would have suffered the same fate. It is further noted that the building code standards found in Chapter 7A are updated every 18 months by the State Fire Marshal to ensure they incorporate the most up to date and proven, science-based, fire-resistant materials and measures.

I93-6: This comment describes what are known as "cluster burns" and states the commenter's opinion that incorporating additional spacing would reduce fire risk within the proposed project. Cluster burns can happen within clusters of older, more vulnerable homes construction that are clustered close together. In fire-hardened communities like the proposed project, more dense development, with ignition resistant landscapes and buildings, is the preferred approach that results in less exposure to wildfire, easier defensibility, and safer firefighter environment (Syphard 2015). Cluster burns are less likely in a fire hardened community like the proposed project because (1) the fire is set back from the developed

areas by wide FMZs; (2) landscapes are maintained and unfriendly to ember ignitions; (3) structures are protected from airborne ember penetration, the leading cause of structure damage/loss from wildfires, and structures are sprinklered which would suppress or control an accidental structure ignition; (4) the shells of all structures provide extended timeframes for combustion and contain heat; (5) there is a minimum of 10 feet between detached structures, with greater distances on sloped streets; and (6) the on-site fire station and other Santee fire stations can respond into the proposed project in a timeframe that is faster than it would take for a typical structure to become fully involved with fire to the point it could impact a neighboring structure. Refer to Fire Protection Plan (Appendix P1), Sections 2.2.8 and 3.1, for additional information.

I93-6 cont. structure-to-structure fire spread by revising the project to provide Zone 1 equivalent spacing (50 feet in San Diego County).

I93-7 The EIR and Evacuation plan do not adequately consider that increasing severity of fire weather increases the intensity of flame lengths used to indicate overall fire intensity. This is evident in the EIR by the inaccurate flame lengths projected for chaparral vegetation with related assumptions built into project design. It is common knowledge at Cal Fire mature chaparral combusts during above-moderate weather conditions in flame lengths exceeding 100 feet. Above-moderate and extreme weather wildfires decrease the probability code-compliant defensible space will be effective at preventing structure ignition. In dense subdivisions, vulnerability of a single structure is vulnerability for many.

I93-8 The FREIR compares the project to developments I inspected from 2016-2021. First, there are significant differences in the lot sizes and space between homes within the Rancho Santa Fe communities of, The Crosby, Cielo, The Bridges and a high-density design on Fanita Ranch with encroachment of adjacent structures into respective home ignition zones. These coastal developments also have significantly different relative humidity levels that differentiate fuel moisture content. So, the comparison is significantly lacking.

I93-9 As I have directly observed in Rancho Santa Fe communities of, The Crosby, Cielo, The Bridges the reality is that these "Shelter-in-Place" communities have an Achilles heal. "Shelter-in-Place community" is a misnomer and could better be describe as a "fire resistant community" so residents remain cognizant that their homes are vulnerable under certain conditions. When these communities are created, they state in HOA's that the community requires fire safe homeowner practices as well as landscaping. Initially the homeowners do as they are required to do with community HOA enforcement of fire safe practices, but conditions are changing significantly over time.

4

I93-7: The comment inaccurately asserts that the environmental analysis does not account for increased weather severity on fire behavior. In fact, the Fire Protection Plan (Appendix P1) models extreme weather wildfire behavior using a variety of fuel models that occur on site along with historical extreme weather as recorded and available through the Remote Automated Weather System (RAWS). This is a standard approach to fire behavior modeling and results in realistic, accurate predictions. The fire behavior modeling was conducted by a fire behavior analyst with 30+ years of modeling and fire behavior experience. The Fire Protection Plan (Appendix P1) uses chaparral fuels (FM 4) in specific areas where that type of fuel would occur at a climax condition when allowed to accumulate. The updated modeling resulted in worst-case flame lengths of approximately 66 feet in the site's heaviest fuels during extreme fire weather. The Fire Protection Plan (Appendix P1) uses wind speed values established by San Diego County. These County standards identify appropriate wind speed inputs that are based on maximum-recorded wind speeds and an analysis of 99th percentile wind speeds from local remote automated weather stations (RAWS). The peak wind values identified in the County standards (and used in the Fire Protection Plan) are the highest wind speeds recorded by a RAWS during the 2003 Cedar Fire. Refer also to response to comment I85-2.

The Fire Protection Plan uses the results of the updated modeling to inform the type of FMZs needed to provide suitable setbacks and defensible space from wildland fuels. The proposed project then incorporated FMZs that exceeded what would have been consistent with code requirements and likely provided adequate protection against wildfire to account for aggressive fire behavior where the off-site fuels are heavier and may produce longer flame lengths and more intense fire. The extended FMZs achieve setbacks of at least twice the modeled flame lengths, providing not only structure protection but safe defensible space for firefighters. To that end, areas where maximum-modeled flame lengths were calculated to be less than 50 feet, 115 feet of FMZ was considered appropriate. Where worst-case flame lengths were calculated to be 66 feet, FMZs were extended to 165 total feet. The FMZs are a critical component of the Fanita Ranch community's fire protection system and would be maintained through the HOA, funded in perpetuity, and inspected annually by a third-party FMZ inspector to ensure that they are functioning as designed at all times and provide documentation to the Santee Fire Department for accountability.

I93-8: The comment provides the commenter's opinion on differences between Rancho Santa Fe shelter-in-place communities and the proposed project, focusing on building separation and humidity differences. However, the comment inaccurately portrays both the densities of

structures and humidity differences within those projects. For example, 4S Ranch and the Bridges, both projects identified as shelter in place communities, include densities similar to the proposed project, as shown on Figures 1 and 2 below. Secondly, during extreme fire weather, when Santa Ana winds occur regionally, humidity drops throughout San Diego County's inland areas, including in Rancho Santa Fe. The humidity in Rancho Santa Fe under Santa Ana wind conditions will shortly match that of areas further inland, between approximately 5 percent and 12 percent, with very little variation. Refer also to Fire Protection Plan, Section 3.1, for other examples of fire hardened communities that have successfully implemented the ignition resistant management techniques like those the proposed project requires with no structures lost during wildfire events.

Figures 1 and 2. 4S Ranch and The Bridges and their structure densities that compare favorably to Fanita Ranch.

(Within the FREIR)

The Project would include conversion of fuels to maintained urbanized landscapes with designated SFD review of landscaping and extensive fuel management zones (FMZs) that exceed the most stringent standards established in the California Fire and Building codes. FMZ would be a minimum 115 feet wide and 165 feet wide where the wildfire hazard is higher. An entity would be funded to manage and maintain the FMZs, with third-party biannual FMZ inspections to confirm the FMZ areas are maintained as designed and function as intended. As such, the development footprint would be converted from readily ignitable fuels to ignition-resistant landscape with significant defensible space and a large fire break.

I93-9 cont.

The evolutionary reality is, over time, some homeowners do not strictly abide to the vegetation/building requirements (many by choice and some because new owners not aware of the strict requirements.) In many of these "shelter in place" communities in Ranch Santa Fe these homes are now surrounded by fully mature trees (many have highly flammable vegetation species like eucalyptus, pine, and pepper trees) that make defending the home, much less sheltering in the home, very problematic. In some cases, the fire issue has become what has been placed next to the residence. Wood fencing/sheds are not allowed and yet are used. Trellises of vegetation drape up onto patio covers, fences, and even structures. Ornamental vegetation is placed near or over houses in large volumes to provide shade and privacy. In many circumstances the native vegetation is very close to structures. Defensible Space Inspections (DSI) do attempt to mitigate of these issues, if seen. Based on curtlage (the requirement that fire inspectors are only allowed, without homeowner permission, to view the properties from where a postal employee/package delivery person is allowed) this creates limitations as to what can be enforced. Most homes DSI's observe can only see the front and side yards from a street. The backyard is usually impossible to see, meaning one quarter of a home is unobserved. DSI enforcement is only allowed for what is observed. The concept of sheltering in place is that initially the homes are relatively safe. The reality is that time degrades a "shelter in place community" with the homeowners' desire to create a private/shaded, beautifully landscaped home using vegetation.

5

I93-9: The comment states the opinion that the "shelter-in-place" communities in Rancho Santa Fe should be better described as "fire resistant communit[ies]" and expresses concerns based on homeowner maintenance over time related to vegetation management and structural components that create a fire hardened project.

First, the proposed project has not been described or designated as a "shelter-in-place community." Instead, the Recirculated Sections describe that early evacuation is the preferred response to a wildfire event (and particularly an extreme wildfire event); however, the proposed project would be developed with redundant and extensive fire protection and ignition resistance features such that it offers contingencies and options beyond evacuation during a wildfire event. This includes the ability to shelter in place or take temporary refuge on site in designated structures, open air parks/green spaces, and/or in protected residences. Thus, the proposed project is considered to be a "shelter-in-place-capable" community where people may take temporary refuge; however, evacuation is preferred where adequate lead time is available. Refer to Fire Protection Plan (Appendix P1), Sections 3.1, 3.3, and 6 and the Wildland Fire Evacuation Plan (Appendix P2).

Second, concerning vegetation maintenance, the proposed project requires twice a year inspections and certifications

of perimeter FMZs, including rear and side yards of perimeter lots where part of the FMZ, and the trail system by third-party inspectors. In addition, the inspectors and landscape plan checker would review landscape plans for consistency with the limitations and requirements of the City and Fire Protection Plan. The HOA would further oversee landscape committee enforcement of fire safe landscaping and ensure fire safety measures detailed in the Fire Protection Plan are implemented.

Third, it is notable that an advantage that the proposed project offers over the referenced Rancho Santa Fe shelter in place communities is that there will be on-site designated shelters and protected open air areas that would be enhanced to serve as temporary sheltering sites. These sites would be identified by the Santee Fire Department and may include schools, the Village Core, large parks, and other protected areas where residents can be relocated to for a temporary period of time, as needed. Refer to Wildland Fire Evacuation Plan (Appendix P2), Section 3.3.2. If a particular home has accumulated debris that could not be identified and corrected by the site's FMZ inspectors or HOA landscape committee, then if that home is threatened, its occupants can be relocated on site to another safe location at the Village Core, a park, or school. This option exceeds that of officially designated shelter in place communities, and provides a further redundant safety feature that would address the concerns expressed in the comment. To minimize smoke inhalation, if sheltering in a building,

The idea that a fire-resistant home (enclosed eves, stucco, fire safe roofing, protective venting, dual pane windows, etc.) can become a safe shelter is hugely problematic when the exterior is encircled with landscaping that will provide a huge heat source that will overwhelm fire resistant features. There is also the issue of the overwhelming smoke and lung searing gasses that will be generated by this vegetation that could overcome humans trapped inside or forced outside if the home ignites.

I93-9 cont.

Fanita Ranch should not be considered a "shelter-in-place community" because of the structure's close proximity to one another. Even if Fanita Ranch structures were designed without encroachment into mutual home ignition zones, the inability to effectively inspect and enforce standards over time argues against placing new homes on such fire vulnerable topography. Fanita Ranch residents will have a significant risk to their safety from wildfire.

A second issue within the FREIR is Reverse 91/Alert San Diego notifications to create a phased evacuation of residents. In this day of cell phones, and very few landlines, the reality is residents immediately send out warnings to all local friends/family and general posts (Nextdoor/Facebook websites) to anyone within the local area. The "phased wave" of reverse 911 is likely to completely collapse as frantic residents flood the roadways. Chaotic reality is much more probable than the FREIR's prediction.

I93-10

(Within the FREIR - 6.5)

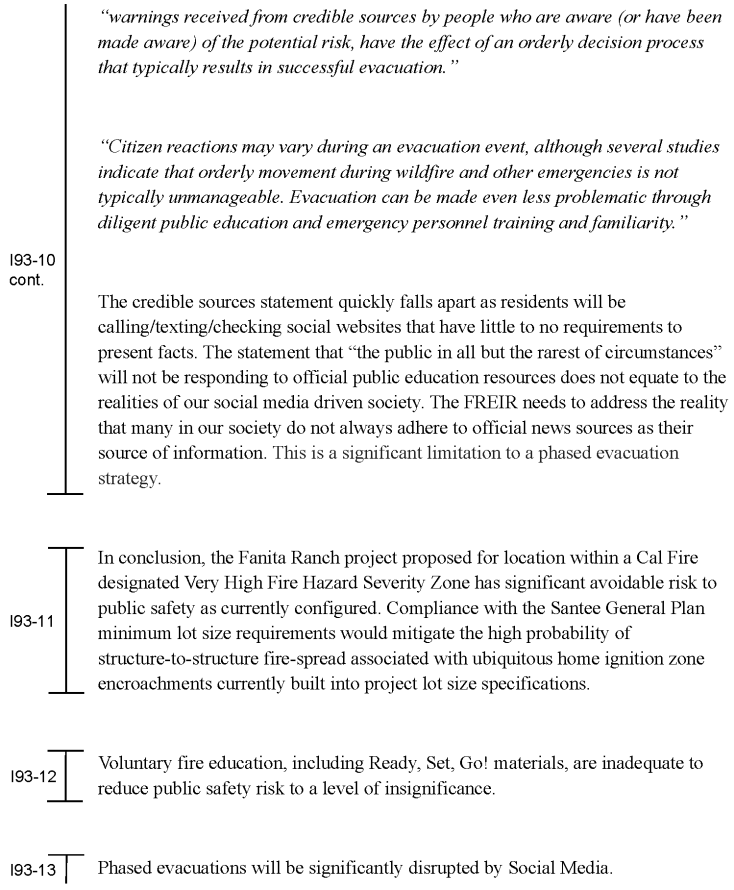
"Further, in all but the rarest circumstances, evacuees will be receiving information from credible sources during an evacuation."

6

residents would be provided sheltering instructions including to turn off air conditioning/HVAC and keep windows and doors closed, which minimizes smoke intrusion into buildings. Residents directed to open air sites (e.g., park) would be directed to areas away from the smoke column and if not possible, they would be moved into pre-determined refuge structures or directed to remain within their well-protected homes. Also note that the areas where residents would be sheltering would be far from active wildfire fronts. There would not be lung searing gasses in these areas as the distance and winds result in dispersion and cooling of the air.

Concerning the proximity of structures to one another, please refer to response to comment I93-6.

I93-10: The comment speculates about the failure of phased evacuations using alerts and messaging systems as social media becomes an avenue for information sharing by the community. This opinion is in contrast to recent evacuations, including the 2017 Lilac Fire where evacuations occurred in a phased manner and utilized AlertSanDiego along with television, radio, air, and on-the-ground notifications. The messaging process assumes a percentage of "shadow evacuees" who will evacuate even if they are not under an evacuation order and



"warnings received from credible sources by people who are aware (or have been made aware) of the potential risk, have the effect of an orderly decision process that typically results in successful evacuation."

"Citizen reactions may vary during an evacuation event, although several studies indicate that orderly movement during wildfire and other emergencies is not typically unmanageable. Evacuation can be made even less problematic through diligent public education and emergency personnel training and familiarity."

I93-10 cont.

The credible sources statement quickly falls apart as residents will be calling/texting/checking social websites that have little to no requirements to present facts. The statement that "the public in all but the rarest of circumstances" will not be responding to official public education resources does not equate to the realities of our social media driven society. The FREIR needs to address the reality that many in our society do not always adhere to official news sources as their source of information. This is a significant limitation to a phased evacuation strategy.

I93-11

In conclusion, the Fanita Ranch project proposed for location within a Cal Fire designated Very High Fire Hazard Severity Zone has significant avoidable risk to public safety as currently configured. Compliance with the Santee General Plan minimum lot size requirements would mitigate the high probability of structure-to-structure fire-spread associated with ubiquitous home ignition zone encroachments currently built into project lot size specifications.

I93-12

Voluntary fire education, including Ready, Set, Go! materials, are inadequate to reduce public safety risk to a level of insignificance.

I93-13

Phased evacuations will be significantly disrupted by Social Media.

7

compensates for this in a variety of ways including intersection control that moves vehicles that need to be moved, and staging but holding traffic that is not at high risk. Further, as quoted in the comment, the Fire Protection Plan cites several studies that indicate that orderly movement during wildfire and other emergencies is typically manageable. The comment provides an opinion that is not substantiated by, and is in fact contradicted by, the evidence. Therefore, no further response is provided.

I93-11: The comment expresses concern regarding the project's risk within a very high fire hazard severity zone. Although the proposed project is located in a very high fire hazard severity zone, it would have a significantly lower potential of actual loss compared to other older communities that are also located in a very high fire hazard severity zone or even those located in a low fire hazard area. This is because there is a distinction between wildfire hazard zones (which the state categorizes) and risk to property (which the state does not quantify). A hazard determination is based on the potential fire behavior (i.e., flame length, crown fire occurrence, capacity to generate embers) in the predicted mature vegetation of the area. Risk, however, is the potential for structural loss from said fire. Thus, even if there is a potential low fire hazard in a given area (expected low flame lengths), a

home might still be at high risk of ignition if the physical characteristics of the property would facilitate structural ignition (e.g., flammable vegetation next to a home with wood siding).

Conversely, and more applicable to the proposed project, a home might be built in what is currently designated as a high fire hazard severity zone due to potential exposure to high flame lengths and ember generation, but may actually be at low risk of ignition if the structure is built with ignition-resistant construction materials and adequate defensible space is provided around the home. Refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, for details regarding the proposed project's fire protection system.

This is especially true in planned communities where fuel modification can be provided over large areas and includes a perimeter FMZ. Recent research indicates that scenarios with lower housing density, large lots (ranchettes), and larger numbers of small, isolated clusters of development resulted in higher predicted fire risk. By way of comparison to the low-density General Plan land use patterns or existing vegetative condition of the site, the proposed project land use density would not only be safer for the residents within the proposed project, but the proposed project itself would act as a large, irrigated fire break that would be expected to impede fire spread by

inhibiting large-scale wildland fires from spreading across the project site and into existing nearby Santee neighborhoods. For additional information concerning the proximity of structures to one another reducing predicted fire risk, please refer to response to comment I93-6.

I93-12: The comment provides a concluding summary of prior comments. Please refer to responses to comments I93-3 and I93-4.

I93-13: The comment provides a concluding summary of prior comments. Please refer to response to comment I93-10 and Thematic Response 4 – Fire and Evacuation, subsections 4a through 4e.

I93-13 cont. Social Media and evacuation messaging need to be addressed to mitigate current societal realities.

I93-14 Any decision to locate residents on Fanita Ranch should explain in detail why the significant impacts to public safety discussed in my letter can be ignored.

Sincerely

David Dugger

Cal Fire Defensible Space Inspector (2016-2021)

Credentialed Educator

Education Masters in AdministrationCreating member,

Valley Center Community Emergency Response Team (CERT)

8

I93-14: The comment expresses the opinion of the commenter and provides concluding remarks. Please refer to responses to comments I93-1 through I93-13 and Thematic Response 4 – Fire and Evacuation, subsections 4a through 4e, for information concerning how the proposed project has addressed potential impacts related to wildfire and evacuation through project design features, application of strict ignition resistant construction materials and methods, and wider than required fuel modification zone setbacks, among other redundant measures. Wildfire risks have been comprehensively analyzed and determined to be less than significant according to CEQA significance thresholds.

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Comment Letter I94: Mary Jo Eager, July 24, 2022

I94

From: Jo Eager
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: RE: Fanita Ranch Revised EIR - Administrative Record
Date: Sunday, July 24, 2022 4:10:54 AM

Dear Mr. Jacobs and City Council,

I94-1

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy and anti-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I94-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

Thank you,

Mary Jo Eager

I94-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I94-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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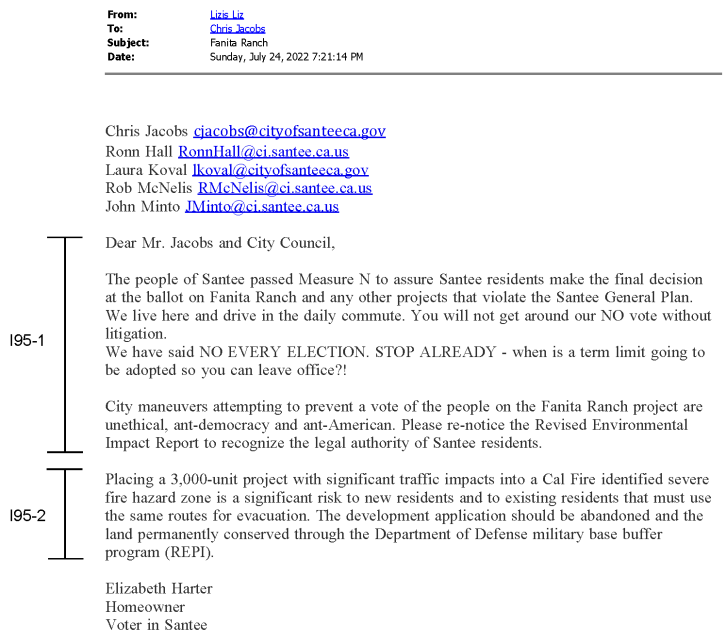
Comment Letter I95: Elizabeth Harter, July 24, 2022

I95



From: Lizis Liz
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 7:21:14 PM

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall RonnHall@ci.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis RMcNelis@ci.santee.ca.us
John Minto JMinto@ci.santee.ca.us

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan. We live here and drive in the daily commute. You will not get around our NO vote without litigation.
We have said NO EVERY ELECTION. STOP ALREADY - when is a term limit going to be adopted so you can leave office?!

I95-1

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

I95-2

Elizabeth Harter
Homeowner
Voter in Santee

I95-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I95-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I96: Scott Huang, July 24, 2022

I96

From: Scott Huang
To: Chris Jacobs
Subject: Fanita Ranch Project
Date: Sunday, July 24, 2022 12:50:39 PM

Dear Chris,

I96-1 As a Santee resident, I am opposing to the Fanita Ranch project due to the concern that this development will negatively impact the community that we live in. This development will stretch the availability of resources such as water, traffic, safety (police, Sheriffs), fire and not to mention the environmental impact it would cause.

As a member of this community, I need to voice my concerns and we need to make sure Santee residents have a voice in the decision making process by voting on the merit of this development, and not beholden to the developers or other lobbying organizations that may not have the best interest of our community in mind.

I96-2 As a Santee representative that works for the people who live in this community, I would ask you to make sure the people's voices and concerns that you represent are heard, and that the decision making process is transparent, public and based on the majority will of the people that live in Santee. Ultimately the people of Santee should be the decision maker on this development based on the merit and what's best for this community.

Thank you and I look forward to engage throughout this process.

Regards,
Scott

I96-1: This comment states that the commenter opposes the proposed project because it will stretch the availability of water and cause traffic, safety, fire, and environmental impacts. Recirculated Section 4.18, Wildfire, concluded that the proposed project would not result in any impacts related to fire. Regarding water, transportation, and public services, please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR for the Fanita Ranch Project was not found deficient related to Utilities and Service Systems (water supply), Transportation, or Public Services, and these sections have not been recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no further response is provided regarding water supply, public services, and traffic impacts that would result from the implementation of the proposed project since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

I96-2: This comment supports a public vote on the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I97: Samantha Hurst, July 24, 2022

I97

From: Samantha Hurst
To: Chris Jacobs
Cc: Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Final Revised EIR (SCH# 2005061118)
Date: Sunday, July 24, 2022 8:26:21 PM
Attachments: Hurst comments_Fanita Ranch Final Revised EIR.pdf

Dear Mr. Jacobs,

Please find attached my 3-page letter commenting on the REIR for Fanita Ranch and the proposed City Council determination to subvert the November 8, 2022 public vote by attempting to introduce the Ordinance 592 / Notice of Exemption (NOE) Fanita Ranch - EHP2021-1.

Thank you.

—

Dr. Samantha Hurst
UCSD | Herbert Wertheim School of Public Health and Human Longevity Science

July 24, 2022

Chris Jacobs, Principal Planner
City of Santee Department of Developers
10601 Magnolia Avenue Santee, CA 92071
cjacobs@cityofsantee.ca.gov

RE: Fanita Ranch Final Revised EIR (SCH# 2005061118)

I97-1 Dear Mr. Jacobs,

Please include all of the following comments in the Administrative Record.

I97-2 The community of Santee passed Measure N in 2020 to assure Santee residents that they would make the final decision regarding the Fanita Ranch housing development by vote in the 2022 mid-term election. Measure N and the (2nd) Referendum ensures voter authority for other similarly-sized projects in violation of the Santee General Plan without the need to qualify future Referendums.

The Constitution for the State of California also vests land use authority in the people. Indeed, the very motive for Santee's incorporation as a City in 1980 was to provide local regulative authority of land use and development by the residents. And yet now we find the Santee City Council is utilizing a spurious method to disenfranchise resident voters by introducing Ordinance 592 / Notice of Exemption (NOE) Fanita Ranch - EHP2021-1 to bypass the will of the people and secure the power of development for the Council exclusively. This effort by Council members is blatantly unconstitutional.

I97-3 A review of the history of land use and development decisions in Santee validates a lack of precedence for choosing Ordinance 52 as an "urgency" declaration. Undoubtedly, this action it is nothing more than a desperately crafted scheme resulting from an illicit partnership between Fanita Ranch developers and the frequently incorrigible actions of Santee City Council. There is NO sanctioned rationale for the Council to usurp land use power that is already intentionally conferred to Santee voters by the Referendum. This letter is to call out this bad behavior and strongly object to the Fanita Ranch Project Notice of Exemption and Urgency Ordinance 592, which is a false claim as a "necessity" for a Regional Housing Needs Assessment. In fact, on review of this strategy the Council used an outdated *higher* regional needs calculation that only barely supports the constitutionality of

I97-1: This comment requests the following comments be included in the administrative record. The City confirms this comment letter will be included in the administrative record. No further response is required.

I97-2: This comment expresses concern about Measure N as applied to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability.

I97-3: This comment addresses Measure N, Urgency Ordinance No. 592, and referenda. Please refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency and Thematic Response 2 – Referendum and Measure N Applicability.

I97-3 cont. Ordinance 592 to remove the public vote entirely out of the hands of the community who is directly affected by the development.

I97-4 I campaigned personally for Measure N during my bid for City Council in 2020 and I listened to thousands [fact] of people across the entire City who are in opposition to the Fanita Ranch Development Project and have been for decades. Community members repeatedly cited opposition to the development for two major reasons: (1) fears of increased fire hazards from living in a "Very High Fire Hazard Severity Zone," [fact … not conjecture], and (2) distress over the escalation of even greater traffic gridlock in the City during daily travel excursion and endangering safe evacuation exit in light of an emergency. As a resident who lives a block off Mast Blvd. I am well acquainted with the long travel hours to and from work that originate with traffic holdups on Mast Blvd leading to and from the I-52. But people who reside along the

I97-5 east end of Mast Blvd are much further removed from connecting streets that lead to freeway entrances and would be grossly impacted by traffic from a 3000-unit development if the Fanita Ranch construction was approved. Even more alarming, Fanita Ranch housing will increase the *in-situ* obstacles of fire evacuation for Santee residents when an uncontrollable wildfire is driven by Santa Ana winds from the north into Santee. This type of devastating event would result in total gridlock of side street

I97-6 detours stemming from a deadly mass exodus given the lack of continuous and unobstructed exit travel from any point north of Mast Blvd to a place of safety. It is a fact that homes adjacent to wildland are most vulnerable to wildfires! Conclusions set forth by developers regarding an evacuation plan are insufficient and often understate critical aspects of fire safety. Safe and successful evacuation would require a significantly heightened level of awareness and training by all residents and emergency services to control or avoid problems with an effective evacuation.

I97-7 So given the public safety, as well the public health risks that would be generated from the development of a 3,000-unit project at Fanita Ranch … how is it legally and constitutionally possible for the Santee City Council to deny the right to a public vote in November 2022 that would remove the ultimate fate of Fanita Ranch from the scope of influence by the Santee community? Ordinance 592 / Notice of Exemption (NOE) Fanita Ranch - EHP2021-1 is nothing more than a devious and misleading

I97-8 tactic by the Santee City Council to divert the will of the people and to disenfranchise resident voters. As a resident of Santee, I object to the use of Ordinance 592 as a means to supersede the right of a public vote on the Fanita Ranch development.

I97-9 The rational for the adoption of Ordinance 592 is falsely motivated to push the construction of luxury housing in a severe fire hazard zone that is neither essential nor

I97-4: The comment raises concerns regarding fears of increased fire hazards from living in a very high fire hazard severity zone and increased traffic/evacuation congestion. Please refer to response to comment I36-1, which explains the difference between a wildfire hazard zone and wildfire risk. Also, refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d, for a comprehensive response detailing how the proposed project is protected from wildfire and how these same protective features protect against increased hazards related to development of the proposed project within a very high fire hazard severity zone. Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, also address evacuations, including evacuation optionality provided by the proposed project that includes partial on-site relocations, partial off-site evacuations, and the phased evacuation approach that would be employed to assist in reducing traffic congestion experienced from past evacuation events. Because the comment raises no new issues that have not been addressed in the Recirculated Sections, no additional response is required.

I97-5: The comment addresses existing traffic in Santee and cites concerns with the potential project effects on traffic congestion. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). The Recirculated Sections were prepared to correct the deficiencies

identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Please refer to Chapter 0, Preface, and Thematic Response 1 – Recirculation and Scope of Review Claims.

I97-6: The comment provides unsubstantiated opinions regarding evacuation of the Fanita Ranch Project and neighboring communities. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4c and 4d, for a comprehensive response detailing how the proposed project is protected from wildfire and how these same protective features provide protections from increased fire ignitions in open space areas. Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, also addresses the evacuation options provided by the proposed project that includes partial on-site relocations, partial off-site evacuations, and the phased evacuation approach that would be employed. In addition, evacuation preparedness, awareness/training, and emergency management is addressed in the Wildland Fire Evacuation Plan (Appendix P2). Evacuation modeling was prepared for the

I97-9 cont.

urgent. As a public health practitioner, it is my professional opinion that this project continues to present too many adverse impacts to both public safety and public health that are neither adequately characterized or properly mitigated in the REIR. This project should be denied altogether.

Sincerely,

Dr. Samantha Hurst

8528 Boulder Way
Santee, CA 92071

proposed project and is included at Appendix D of the Wildland Fire Evacuation Plan (Appendix P2), which shows numerous potential evacuation routes that traffic may use and concludes that evacuation traffic generated by the proposed project would not significantly increase the average evacuation travel time or result in unsafe evacuation timeframes. Because the comment raises no new issues that have not been addressed in the Final Revised EIR, no additional response is required.

I97-7: This comment supports a public vote on the proposed project. Refer to responses to comments I97-2 and I97-3.

I97-8: This comment is concerned with the use of Ordinance 592 for the proposed project. Refer to responses to comments I97-2 and I97-3.

I97-9: This comment is concerned with the use of Ordinance 592 and provides an opinion that the proposed project includes impacts to public safety and health. Refer to responses to comments I97-2 and I97-3. The City acknowledges the comment expresses general opposition to the proposed project and provides concluding remarks, but does not raise any new or additional environmental issues concerning the adequacy of the Recirculated Sections. For that reason, the City provides no further response to this comment.

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Comment Letter I98: Bill Kuni, July 24, 2022

I98

From: Bill Kuni
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 11:17:36 AM

I98-1

To The City Council:

We have already expressed by a large majority our desire to vote on the matter of Fanita Ranch and have the majority rule prevail. That's the democratic way. The City Council has no right to overturn the wishes of the residents based on legal trickery to serve their own purposes!

Bill Kuni

I98-1: This comment supports a public vote on the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I99: Michele Perchez, July 24, 2022

I99

From: michele perchez
To: Chris Jacobs
Subject: RE: public comment for Fanita Ranch recirculated EIR (comments due July 25)
Date: Sunday, July 24, 2022 12:52:32 PM

I99-1 Please enter the following into the public record document. Thank you.

Michele Perchez
Santee, CA

I99-2 The Essential Housing Element Ordinance found in Appendix R of the revised EIR does not allow for public input in the process, therefore, it is in direct violation of CEQA requirements—"Further, nothing herein restricts the City from denying a certified project on CEQA or other objective grounds".

I99-1: This comment requests that the comment letter be included into the public record. All public comment letters received will be included in the public record and Revised Final EIR.

I99-2: This comment is concerned with the Essential Housing Ordinance in Appendix R of the Final Revised EIR and states that it does not allow for public input, which is a violation of the California Environmental Quality Act (CEQA) process. Please refer to Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, which explains the City's legal adoption of the Urgency Ordinance No. 592, the Essential Housing Program, and consistency with the Santee General Plan. The City's Essential Housing Program was certified under CEQA, and the proposed project met the requisite requirements to be certified as an essential housing project under the program. The proposed project is still going through the CEQA review process, which includes a public review period allowing public input. The City Council, as the decision-making body, retains discretion to approve or deny the proposed project in accordance with CEQA.

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Comment Letter I100: Susan Piszkin, July 24, 2022

I100

From: Sue Piszkin
To: Chris Jacobs; Ronn Hall; Laura Koval; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR
Date: Sunday, July 24, 2022 9:04:01 PM

Dear Mr.Jacobs and City Council,

I100-1

The people of Santee passed Measure N in 2020 to assure that Santee residents make the final decision at the ballot box regarding Fanita Ranch and any other projects that violate the Santee General Plan.

Any maneuvers (Ordinance 592) that attempt to prevent a vote by the residents of Santee regarding the Fanita Ranch Project are unethical and violate the will of the electorate. Please re-notice the Revised EIR to recognize the legal authority of Santee residents.

I100-2

The Fanita Ranch project is ill-conceived. Adding 3000+ housing units will have untenable traffic impacts/gridlock on a daily basis, and in the event of an evacuation new and existing residents will be put in serious jeopardy.

Please consider permanently preserving the open space via the Department of Defense military base buffer program. This open space is home to abundant wildlife and is enjoyed recreationally by nature lovers, hikers, and cyclists. To lose this resource forever would be a tragedy.

Thank you,

Susan Piszkin, Santee resident

I100-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch, asserts that the Final Revised EIR should be re-noticed, and references Ordinance 592. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I100-2: The comment states that the proposed project will result in traffic impacts, and in the event of evacuation, new and existing residents will be put in serious jeopardy. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims related to traffic and transportation impacts of the proposed project. The Final Revised EIR was not found deficient regarding transportation, and the Transportation section of the Final Revised EIR has not been revised and recirculated pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding potential traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Regarding evacuation, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c. The Recirculated Sections of the Final Revised EIR also discuss that the proposed project is not anticipated to expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Instead, the proposed project may reduce fire risk by converting areas of ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest code standards and by including an on-site fire station, access for firefighters, water and fire flow to code standards, and other fire protection features.

Finally, this comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project

would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, The Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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Comment Letter I101: Jennifer Smith, July 24, 2022

I101

From: Jennifer Smith
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 10:17:41 PM

I101-1

City planning claims the city council made up a rule (Ordinance 592) that allows approval of Fanita Ranch without the public vote required by the General Plan Protection Measure N approved by Santee voters in 2020.

In contradiction, the Mayor stated to the press the project requires a General Plan Amendment and is subject to the Measure N voting requirement. He is correct - but is he sincere considering he is also fully aware of the planning department/city council scheme?

Making up a rule to avoid Santee voters is yet another example of corruption that erodes trust in government/politicians.

RE: Fanita Ranch Revised EIR - Administrative Record

The people of Santee passed Measure N to assure Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan.

City maneuvers attempting to prevent a vote of the people on the Fanita Ranch project are unethical, ant-democracy and ant-American. Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I101-2

Placing a 3,000-unit project with significant traffic impacts into a Cal Fire identified severe fire hazard zone is a significant risk to new residents and to existing residents that must use the same routes for evacuation. The development application should be abandoned and the land permanently conserved through the Department of Defense military base buffer program (REPI).

I101-3

REMEMBER:
"He [Minto] noted that because the project would need an amendment to the city's General Plan, it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval."

"I want the city to acknowledge that the people of Santee have earned the right to vote on this project," Collinsworth said. "They (the City Council) are doing everything they possibly can [to prevent] the people of Santee [from deciding the project's fate]."

Jennifer Smith - Santee Resident

I101-1: This comment mentions Measure N and Ordinance 592 and refers to a quotation by the Mayor that the proposed project would require a General Plan Amendment. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I101-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. Instead, fire-resistant development in this area may reduce fire risk by converting areas of ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest Code standards, and by including an on-site fire station, access for firefighters, water and fire flow to code standards, and other extensive fire protection features.

Concerning traffic impacts, the Final Revised EIR for the Fanita Ranch Project was not revised and recirculated related to Transportation, as the transportation analysis was not found deficient in the trial court's ruling, judgment, or writ. Refer to Thematic Response 1 — Recirculation and Scope of Review Claims. Therefore, no response is provided regarding potential traffic impacts that would result from the implementation of the proposed project since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Finally, this comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR

provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

I101-3: This comment cites a quotation by the Mayor regarding General Plan consistency. Please refer to response to comment I101-1.

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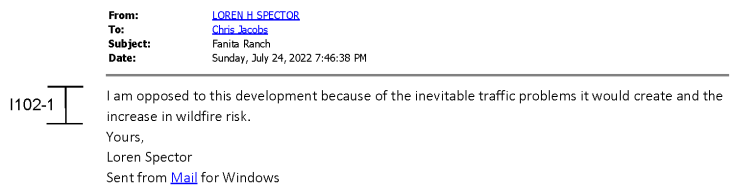
Comment Letter I102: Loren Spector, July 24, 2022

I102



From: LOREN H SPECTOR
To: Chris Jacobs
Subject: Fanita Ranch
Date: Sunday, July 24, 2022 7:46:38 PM

I102-1 I am opposed to this development because of the inevitable traffic problems it would create and the increase in wildfire risk.
Yours,
Loren Spector
Sent from Mail for Windows

I102-1: This commenter is opposed to the proposed project due to traffic and increased wildfire risk. The Final Revised EIR for the Fanita Ranch Project was revised and recirculated under the California Environmental Quality Act (CEQA). Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. The comment does not raise any specific issue with the analysis in the Recirculated Sections. Therefore, no further response is required.

The Recirculated Sections were prepared to correct the deficiencies identified in the trial court's ruling, judgment, and writ. Those portions of the Final Revised EIR that were not found deficient, including Transportation, were not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Refer to Thematic Response 1 – Recirculation and Scope of Review Claims. Therefore, no response is provided regarding the proposed project's traffic impacts since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

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Comment Letter I103: Tanya and John Callis, July 25, 2022

I103

From: tanyananette@yahoo.com
To: Chris Jacobs
Subject: Fanita Ranch
Date: Monday, July 25, 2022 3:09:12 PM

To whom it may concern,

I103-1 My husband John and I have lived in Santee since 2001. We want to say that Fanita Ranch is an extremely bad idea! Traffic is already a nightmare, with no solution in sight. I live on Amino Drive near the 52/Mast freeway ramps. One morning a few months ago I looked out my window and panicked. I thought everyone was evacuating! Turns out they are using Amino Dr. and Leticia to cut through traffic instead of waiting on Carlton. Stop and go traffic now on these streets too. We can't get out of our driveway.

I103-2 We did evacuate in 2003 and 2007 due to wildfires rolling over the hill towards Mast. Brick size embers were flying! It was super scary and not enough help in sight. On that note, I collect donations for Animal Rescue and I am actually running around Santee seeing everything. I was

I103-3 shocked the first time that I went up through the Weston Homes across from West Hills High School. There are cars parked on both sides of the street leaving room for one car to travel through. I told my husband if they have another fire back there it's going to be really bad! I only see two main streets out for the whole community, which I believe to be Boulder Vista and Weston Road. I believe that community has 415 homes.

I103-4 Fanita Ranch is a horrible idea. Santee is a great community. Although, not the sweet quiet place it used to be. Adding more homes and leaving the 52 as it is, plus one freeway entrance at Mast.....it will never work. My husband and I are greatly opposed and are willing to go door to door to get signatures if needed.

Thank you for your time.

Regards,

Tanya and John Callis
8408 Amino Drive
Santee, CA 92071

I103-1: The commenter opposes the proposed project and details existing traffic conditions near their property. The comment addresses a general subject area (traffic) that received extensive review in the Final Revised EIR for the Fanita Ranch Project, and which was not recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The comment does not raise any specific issue regarding the analysis in the Recirculated Sections and, therefore, no more specific response can be provided or is required.

I103-2: The commenter states that they evacuated from wildfires in 2003 and 2007. The comment does not raise any specific issue regarding the analysis in the Recirculated Sections. Notwithstanding, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and the various scenarios for evacuation during a wildfire, and subsection 4e, which compares past wildfires that have occurred in Southern California with those that could occur with the proposed project.

I103-3: This comment refers to circulation in the Weston development. Please note that the Weston development was approved by the City of San Diego, not the City of Santee. This comment does not raise a significant

environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR and does not relate to the proposed project. Therefore, no further response is required. All of the proposed project roads would provide adequate width for evacuating vehicles to exit while dedicated inbound lanes remain open for emergency vehicles. Specifically, as detailed in the Wildland Fire Evacuation Plan (Appendix P2), the proposed project's roadways are all designed to meet or exceed County of San Diego Consolidated Fire Code requirements—including unobstructed travel lanes, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside fuel modification zones—potential conflicts that could reduce roadway efficiency are minimized, allowing for smooth evacuations.

I103-4: This comment states opposition for the proposed project due to more traffic on State Route 52 and Mast Boulevard. The City notes the comment expresses general opposition to the proposed project but does not raise any issue related to the adequacy of the Recirculated Sections. Concerning traffic/transportation impacts, please see response to comment I103-1. No response is provided regarding the proposed project's traffic impacts or improvements since this topic is outside the scope of the Recirculated Sections of the Final Revised EIR.

Comment Letter I104: Tina Deesen, July 25, 2022

I104

From: Tina Deesen
To: Chris Jacobs
Subject: Fanita Ranch public comment to the revised final environmental impact report
Date: Monday, July 25, 2022 10:32:26 AM

I104-1

Mr. Jacobs,

Please include my email to the public comment.

I104-2

I have made my viewpoint before and I want to say again that the risk of fire in the area of proposed Fanita Ranch is too great to move forward with any housing project. As we've seen in the past, it's an area that is prone to fire, and it's not a question of if a fire happens, it's when a fire happens that is a problem for all residents. I live in the area, and with the new project even halfway complete, it would be very difficult for residents to evacuate with the number of current and proposed residents in the area due to so few evacuation routes. The Magnolia extension which is one of the main evacuation routes will not be complete until the 1500th equivalent dwelling unit, this puts project residents and current residents like myself and our families and risk of injury and death. I don't feel this is safe for my family or anyone else.

Sincerely,

Tina Deesen

I104-1: This comment requests that the comment letter be included in the public comments. All public comments received will be included in the public record and Final Recirculated Sections of the Final Revised EIR.

I104-2: This comment is concerned with the fire risk on the project site and states that it would be difficult for current and future residents to evacuate during a fire before the Magnolia Avenue extension is constructed. Please refer to response to comment I72-2 and Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire. Specifically, a total of nine evacuation scenarios were analyzed (Wildland Fire Evacuation Plan, Appendix P2) that included a full project without the Magnolia Avenue extension scenario and a full project with Magnolia Avenue extension. Also, refer to subsection 4c, which discusses the proposed project's fire safety measures and how they would not exacerbate wildfire risk to the existing community.

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Comment Letter I105: Janet Garvin, July 25, 2022

I105

RE: Fanita Ranch Revised EIR-Administrative Record

Chris Jacobs cjacobs@cityofsanteeca.gov

Ronn Hall RonnHall@ci.santee.ca.us

Laura Koval lkoval@cityofsanteeca.gov

Rob Mc Nelis RMcNelis@ci.santee.ca.us

Dustin Trotter dtrotter@citeyofsateeca.gov

John Minto JMinto@ci.santee.ca.us

Dear Mr. Jacobs and City Council,

I105-1 Measure N, the Santee General Plan Initiative passed with over 15,000 votes giving the people of Santee the final decision on Fanita Ranch as well as any other project that violates the General Plan.

The City Council and the effort to undermine the people's vote is undemocratic, an abuse of power and echoes what we have seen on a national scale. I ask that you re- notice the revised Environmental Impact report recognizing the legal authority of Santee residents to vote on this project.

I105-2 I continue to find the revised EIR to be lacking in responding to the significant impact of fire hazard. Placing 3000 homes greatly increases the risk & danger to existing neighborhoods. With homes in the area there is no ability to back light fire to protect existing neighborhoods as was done in 2003. The scenarios for evacuation described in the revised EIR are extremely limited. There are no new evacuation routes or safe areas identified. In fact, safe areas are

I105-3 hard to pinpoint from the EIR. Many traffic improvements promised for safety will not be built before homes are completed. A promised fire station will not be completed. The EIR states

I105-4 communities have survived wildfires but in recent years in California communities have been devastated by wildfires. Most troubling to me is the section on "shelter in place". It sounds like a death trap to me.

I105-5 Overall, I think the application should be rejected in its entirety. Placing a 3000 unit development in a Cal Fire designated extreme fire hazard zone places new and existing residents at great risk. The area would best be conserved permanently through the Department of Defense military base buffer program (REPI}

Thank You,

Janet Garvin

Settle Rd.

I105-1: This comment supports Measure N and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability, which explains California Elections Code, Section 9241, and how it does not apply to the proposed project. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I105-2: This comment is concerned with the addition of 3,000 homes increasing risk to existing neighborhoods and states the evacuation scenarios are limited. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire, which is the requirement of CEQA. Also, refer to subsection 4c, which discusses the proposed project's fire safety measures and how they would not exacerbate wildfire risk to adjacent communities.

I105-3: This comment states that traffic improvements and the fire station promised for safety will not be built before the proposed homes are completed. With regard to the timing

of traffic improvements, the analysis explains the improvements assumed in connection with each evacuation scenario studied. See Appendix P2, Evacuation Plan, Appendix D, Technical Memorandum, pp. 15-16, Road Network Assumptions. The proposed project will be constructed in phases, with traffic improvements being installed in advance of or concurrently with demand for such improvements. Several evacuation scenarios analyzed in the Evacuation Plan assume full buildout of the proposed project to reflect the maximum number of vehicles that would be evacuating. Other scenarios reflecting existing conditions do not include street improvements. Refer to response to comment I72-2 related to traffic improvements. In earlier stages of project buildout, the need for certain traffic improvements will not yet have arisen as there will be fewer occupants of the project. At no point during the phased buildout of the proposed project will insufficient transportation improvements exist to safely evacuate the project and adjacent communities.

As to the fire station, the proposed project conditions of approval require adequate on-site fire equipment and personnel from the time project construction commences. The applicant has the option of constructing a temporary fire station initially, followed by a permanent fire station. If the applicant constructs the temporary station first, the construction of the permanent fire station must commence

prior to the 750th Certificate of Occupancy for a dwelling unit and must be completed by the 1,250th Certificate of Occupancy for a dwelling unit, or within 2 years of commencement of construction, whichever is earliest. However, at no time during the construction phase or occupancy of the project will there be a lack of on-site firefighting capability because either a permanent or a temporary fire station must be constructed prior to the occupancy of any residential units in the proposed project. Also refer to response to comment I63-5.

I105-4: This comment states that communities in California have been devastated by wildfires and is concerned with the shelter-in-place section of the Final Revised EIR. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4d and 4e, which further discuss shelter-in-place as a potentially safer option than evacuation under certain circumstances and compares other wildfires in recent years with those that could occur on and around the project site.

I105-5: This comment states that the proposed project should be rejected due to fire risk in an extreme fire hazard zone and recommends that the land be permanently conserved through the Department of Defense military base buffer program (REPI).

Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which

discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. The Recirculated Sections of the Final Revised EIR also discuss that the proposed project is not anticipated to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Instead, the proposed project may reduce fire risk by converting areas of ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest Code standards, and by including an on-site fire station, access for firefighters, water and fire flow to code standards, and other fire protection features.

First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond

to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

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Comment Letter I106: Gloria Gerak, July 25, 2022

I106

From: Gloria Gerak
To: Chris Jacobs
Subject: EIR Comments Fanita Ranch submitted 7.25.22
Date: Monday, July 25, 2022 10:26:28 AM

Dear Sir:

Upon what authority does the City intend to preempt the Measure N voting requirement and the Santee General Plan with approval of the project?

The people of Santee rejected a 3,000 project on Fanita Ranch by a 2/3 vote. The people qualified a second Referendum on the current 3,000 unit project. The people of Santee passed an initiative to provide voters the authority on similar sized projects in violation of the Santee General Plan without the need to qualify future Referendums.

I106-1

If there will not be a public vote, how do you explain the Mayor's statement in East County Magazine?
Asked what he would do should Fanita Ranch plan come back to the council, Minto was reluctant to say how he'd vote. He noted that because the project would need an amendment to the city's General Plan, it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval.

https://www.eastcountymagazine.org/print/37950?fbclid=IwAR0bu8JR6GGiwGs9n7Qh6zjLuwWlnCSOFZwoVhC1rM58dYu96bqQW8ulLjQ

Thanks and Be Well,

Gloria Valenti Gerak, Ronald Gerak, Alexander Gerak

9605 St. Andrews Drive
Santee, CA 92071
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I106-1: This comment supports Measure N and bringing the proposed project to a vote by the people through a second Referendum. This comment also cites an East County Magazine article and provides a quote by the City Mayor. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I107: Sharon Guerrero, July 25, 2022

I107

From: SHARON DONOHOO
To: Chris Jacobs; Ronn Hall; Rob McNelis; John Minto; Dustin Trotter
Subject: Fanita Ranch Revised EIR- Administrative Record
Date: Monday, July 25, 2022 3:12:01 PM
Attachments: City Council 7-25-22.pdf

I107-1

Hello,

Please review my attached letter regarding the proposed Fanita Ranch Project. Based on Measure N, and community consideration, VOTERS should be allowed to vote on the Fanita Ranch Project at the next election.

Thank you,

Sharon Guerrero

619-994-1430

I107-1: This comment introduces the following comments and supports Measure N and a vote on the proposed project by the people. This comment is introductory. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

RE: Fanita Ranch Revised EIR – Administrative Record / 7-25-22

Chris Jacobs cjacobs@cityofsanteeca.gov
Ronn Hall RonnHall@ci.santee.ca.us
Laura Koval lkoval@cityofsanteeca.gov
Rob McNelis RMcNelis@ci.santee.ca.us
John Minto JMinto@ci.santee.ca.us
Dustin Trotter dtrotter@cityofsanteeca.gov

Dear Mr. Jacobs and City Council,

I107-2 I am once again voicing my concerns to the City regarding traffic congestion, public safety, & loss of natural habitat for wildlife that will occur if the City Council continues to allow high density housing projects to develop in Santee. My family and friends are very much against the Fanita Ranch project & Carlton Oaks Golf Course building high density housing developments in an area that does not have the roadways and infrastructure to support them. Placing thousands of new homes in the **proposed Fanita Ranch location** will have significant traffic impacts in an area that Cal Fire identified as a **severe fire hazard zone**. This would cause a huge risk to new and existing residents that must use the same limited routes for evacuation.

I107-3 Everyone should be looking at Santee Municipal Code- Title 13- Zoning Park & Open Space. Our current city plan "indicates areas of permanent open spaces, biological resource protection, parks and areas precluded from major development because of land constraints or habitat preservation". Our road system needs to be fixed FIRST, before another 3,000 housing units are built in a severe fire hazard area. Stop looking at financial gain, and consider what is safe for our community. I believe the development application should be abandoned & the land permanently conserved through the Department of Defense military base buffer program.

I107-4 The residents of Santee **passed Measure N** in 2020 to assure that the people living in Santee would be able make the final decision at the ballot regarding Fanita Ranch and any other projects that violate the Santee General Plan. It is **unethical and anti-democratic** for City of Santee staff members to attempt to stop a vote by the Santee residents on the proposed Fanita Ranch Project.

Sincerely,

Sharon Guerrero / Sharon Guerrero 7-25-22

I107-2: This comment is opposed to the proposed project and refers to issues including traffic, public safety, loss of habitat for wildlife, and fire risk. Regarding potential project impacts to traffic, biological resources, and public services, please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. The Final Revised EIR for the Fanita Ranch Project was not found deficient as to these issues, and the Transportation, Biological Resources, and Public Services sections were not revised and recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). Therefore, no response is provided regarding the project's potential traffic, wildlife, or public safety (police and fire) impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

Regarding wildfire risk and evacuation, please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire in high fire hazard severity zone, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. The Recirculated Sections of the Final Revised EIR also discuss that the proposed project is not anticipated to expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving

wildland fires. Instead, the proposed project may reduce fire risk by converting areas of ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest code standards and by including an on-site fire station, access for firefighters, water and fire flow to code standards, and other fire protection features.

I107-3: This comment cites the Santee Municipal Code, Title 13, Zoning Park and Open Space; states that City roads need to be fixed prior to the proposed project; and recommends that the project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). The project site is designated Planned Development (PD) in the City's General Plan, which allows mixed-use development potentially including parks, commercial, recreational, and various densities of residential development. Please see Thematic Response 1 – Recirculation and Scope of Review Claims and response to comment I107-1. The Final Revised EIR for the Fanita Ranch Project was not found deficient regarding Biological Resources, Recreation, Transportation, or Public Services, and these sections were not revised and recirculated pursuant to CEQA Guidelines, Section 15088.5(f)(2). No responses are provided regarding parks and open space or traffic improvements since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR.

First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, the Final Revised EIR provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, is legally and socially infeasible and the alternative's analysis was deemed sufficient, this suggestion is rejected.

I107-4: This comment supports Measure N and bringing the proposed project to a vote by the people. Please refer to response to comment I107-1.

Comment Letter I108: Rob, Elena, and Alina Leholm, July 25, 2022

I108

Friday, July 22nd, 2022
Subject: Santee City Council Needs to Follow Measure N Requirements for a Public Vote

Chris Jacobs: cjacobs@cityofsanteeca.gov
Ronn Hall: RonnHall@ci.santee.ca.us
Laura Koval: lkoval@cityofsanteeca.gov
Rob McNelis: RMcNelis@ci.santee.ca.us
John Minto: JMinto@ci.santee.ca.us
Dustin Trotter: dtrotter@cityofsanteeca.gov

RECEIVED
JUL 25 2022
CITY OF SANTEE

Dear Mr. Jacobs and Santee City Council,

I108-1 We appreciate much of the work that you are all doing for the City of Santee. Furthermore, we have enjoyed participating in several of the Santee City Council meetings over the past few years.

In the past, we have spoken with and submitted letters to the Council on key issues affecting Santee residents. It is with this same spirit that we write you today regarding the proposed Fanita Ranch Project.

I108-2 In 2020, the people of Santee passed Measure N to assure that Santee residents make the final decision at the ballot on Fanita Ranch and any other projects that violate the Santee General Plan. Therefore, the Santee City Council must follow the Measure N requirements for a public vote on the Fanita Ranch Project.

Furthermore, we, the residents of Santee, state: any Santee City Council maneuvers attempting to prevent a vote of the people on the Fanita Ranch Project are unethical and anti-democratic. In order to recognize the legal authority of Santee residents, please modify and re-notify the Revised Environmental Impact Report to require a public vote on the Fanita Ranch Project – per Measure N.

I108-3 As a related matter, we are deeply concerned by **Ordinance 592** that the Santee City Council

I108-1: This comment discusses the commenter's previous participation in City Council meetings and letters submitted on issues in the City. This comment is an introduction that does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I108-2: This comment refers to Measure N passed in 2020 and supports a public vote on the proposed project. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency.

I108-3: This comment voices concern with Ordinance 592 and its use to preclude a public vote on the proposed project. Please refer to Thematic Response 3 – Urgency Ordinance Number 592 and General Plan Consistency, Thematic Response 2 – Referendum and Measure N Applicability, which explain how the Urgency Ordinance came about in the City and its use regarding the proposed project.

I108-3 cont.

adopted last December. This ordinance is intended to shorten the length of time for the development approval process for smaller housing projects. However, our concern is that this ordinance may be misused to preclude a public vote on the Fanita Ranch Project from occurring.

I108-4

The Santee City Council should know, and be very concerned, about the potentially detrimental consequences of placing a 3,000-unit project into a CAL FIRE-identified "severe fire hazard zone." By placing the project in this fire zone, a significant risk is posed to the new potential Fanita Ranch residents as well as to existing Santee residents since they all must use the same two routes for evacuation in the event of a wildfire. The bottom line is: the Fanita Ranch Project is a fire trap for its potential residents and for us Santee residents nearby. The fire hazard that this project poses is only one of its many fatal flaws.

I108-5

We have previously submitted to the Santee City Council a letter listing some of the other fatal flaws of the Fanita Ranch Project. In this aforementioned letter, we addressed the devastating issue of the unacceptable traffic congestion that would result from this new project. More specifically:

1) Due to the fact that the Fanita Ranch Project Plan calls for no new entrance/exit roads, all traffic from Fanita Ranch will be *force-funneled* into the only two existing roads: Fanita Parkway and Cuyamaca Street. These roads only run south onto Mast Blvd. (It should be noted that Cuyamaca Street eventually allows an option of taking a cross road to Magnolia Blvd). This said, the situation of force-funneling all traffic south onto Mast Blvd for this 3,000-unit project - *plus the already existing traffic of the current residents on these two roads* - will cause an dire traffic gridlock on Mast Blvd, Fanita Parkway, and Cuyamaca Street during the rush hour periods.

This situation begs the question: WHY ARE THERE NO NEW ROADS proposed to/from Fanita Ranch to the north, east and west? No new proposed roads to the north, east or west is the reason why all traffic will be forced south onto Mast Blvd and cause horrendous congested traffic on Mast Blvd for students, workers, and residents or visitors of Santee. This traffic gridlock is just ONE of the many fatal flaws of the proposed Fanita Ranch Project.

I108-4: This comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss evacuation planning for the proposed project and various scenarios for evacuation during a wildfire, and subsection 4c, which explains that placing a development in a high fire hazard severity zone does not necessarily increase the risk. The Recirculated Sections of the Final Revised EIR also discuss that the proposed project is not anticipated to expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Instead, the proposed project may reduce fire risk by converting areas of ignitable fuels to ignition-resistant landscape and structures that are provided with defensible space consistent with and exceeding the strictest code standards, and by including an on-site fire station, access for firefighters, water and fire flow to code standards, and other fire protection features.

The proposed project would meet or exceed the code requirements for access roads, including the 2019 California Fire Code, Appendix D, and Santee's local amendments to the California Fire Code. Two external points of ingress/egress are provided to/from the project—Fanita Parkway and Cuyamaca Street—which can be used for a combination of

evacuation and emergency access. These two routes lead to three main arteries traveling south off site (Fanita Parkway, Cuyamaca Street, and Magnolia Avenue) and numerous east/west connections off site during an emergency evacuation event. In addition, the proposed project provides the contingency option of on-site sheltering/refuge at designated locations if considered safer than evacuation.

I108-5: This comment raises concerns regarding proposed project traffic using Fanita Parkway and Cuyamaca Street and inquires why other roads to the north, east, and west are not built to accommodate project traffic and relieve traffic noise. Please refer to response to comment I108-4. The evacuation traffic model provided as Appendix D to the Wildland Fire Evacuation Plan (Appendix P2) utilizes a microscopic, multimodal traffic flow modeling software to simulate traffic conditions, track individual vehicles in the system, and ultimately describe evacuation time to "safe" areas south past Mission Gorge Road. The evacuation analysis included consideration of traffic on Mast Boulevard, Fanita Parkway, and Cuyamaca Street. The evacuation analysis shows that evacuation traffic generated by the proposed project would not significantly increase the average evacuation travel time or result in unsafe evacuation timeframes.

Regarding "rush hour" congestion, during an evacuation effort, regular commuter traffic flows would be impeded as first responders would control traffic in and around the evacuation area to ensure at-risk areas are able to safely

I108-5 cont.

2) We also strongly believe that the Fanita Ranch Project will be harmful to most Santee residents, especially those of us north of Mast Blvd. For those of us north of Mast Blvd, we face the potential loss of home property value as a result of this added traffic congestion and noise on Fanita Parkway (as well as on Mast Blvd and Cuyamaca Street). We appeal to the Santee City Council, on behalf of all Santee residents, to recognize and understand these concerns.

I108-6

We also acknowledge and agree with the Fanita Ranch Project objections made by other concerned Santee residents. Some concerns raised by other residents include: the various negative environmental impacts the project could have; the project adding to existing over-building in Santee (several new apartment, housing, and other building complexes that have recently been built in Santee – Weston is only one such example); and the perilous threat to Santee wildlife (reptiles, mammals, birds, and more).

I108-7

In conclusion, the development application for the Fanita Ranch Project should be permanently abandoned. As discussed above, pursuing the Fanita Ranch Project would ensue the onslaught of several issues, ranging from deadly fire hazards to horrific traffic to harmful environmental effects. Furthermore, and as has been recommended by many Santee residents, the land should be permanently conserved through the Department of Defense military base buffer program, which calls for unoccupied space between a military base, in this case, Miramar, and residential zones.

In the name of democracy, we ask that you reconsider the development of the Fanita Ranch Project and abide by Measure N, which would allow Santee residents to decide the future of the project.

Thank you,

Rob B. Leholm Elena V. Leholm Alina K. Leholm

evacuate. Numerous strategies would be employed to enhance traffic flow out of the evacuation area and reduce the overall evacuation time, which may include traffic signal coordination, closure of off and on-ramps, Intelligent Transportation Systems, segregation of pedestrian and vehicle traffic, exclusive bus routes, phased/targeted evacuation, phased release of parking facilities, use of designated markings, road barriers, contraflow, and use of the San Diego Freeway Patrol Service.

No response is provided regarding potential project traffic congestion or noise impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims.

I108-6: This comment agrees with other City residents who have objected to the proposed project regarding negative environmental impacts, over-building in the City, and threats to wildlife. As stated in Section 4.10, Land Use and Planning, specifically Section 4.10.5.2, the proposed project would address the City's housing crisis by providing a mix of residential and nonresidential uses and a mix of housing types and sizes. Refer also to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency, which discuss the City and state housing crisis. Also, please refer to response to

comment I108-4. No response is provided regarding potential impacts to wildlife and other environmental impacts since these topics are outside the scope of the Recirculated Sections of the Final Revised EIR. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims.

I108-7: This comment reiterates comments made in the comment letter regarding fire hazards, traffic, and Measure N. Please refer to responses to comments I108-2, I108-4, and I108-5.

Finally, this comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). First, the REPI is a federal program, and the City does not have the authority to place lands in conservation under this program. Second, the project site is privately owned land. Third, preservation of the site would not achieve the basic project objectives. Fourth, preserving the site in its current undeveloped state would present a greater, not reduced, wildfire risk to existing residents. This is because the proposed project would not be developed in a fire-resistant manner with extensive fuel modification zones, irrigated landscape, hardscape, water supply, and ignition-resistant buildings to act as a fire break, and no new fire station would be developed on site to be able to promptly respond to and extinguish fire starts. Fifth, The Final Revised EIR

provided a reasonable range of alternatives to reduce impacts from the proposed project in compliance with CEQA Guidelines, Section 15126.6(a). The Alternatives section was not found deficient in the trial court's ruling, judgement, and writ. Please refer to Thematic Response 1 – Recirculation and Scope of Review Claims. For each of these reasons, including that the suggestion fails to meet the most basic project objectives, would not reduce wildfire impacts, and is legally and socially infeasible, and the alternative's analysis was deemed sufficient, this suggestion is rejected.

Comment Letter I109: Richard Mutch, July 25, 2022

I109

From: Richard Mutch
To: Chris Jacobs
Subject: RE: Fanita Ranch Revised EIR – Administrative Record
Date: Monday, July 25, 2022 2:58:21 PM

I109-1

Dear Mr. Jacobs and City Council,

The people of Santee passed Measure N to assure that Santee residents make the final decision at the ballot, on Fanita Ranch, and any other project(s) that that go against the Santee General Plan.

City maneuverings attempting to prevent a vote of the people on the Fanita Ranch project are unethical, anti-democracy, anti-American, not to mention against a law – Meas. N.

Please re-notice the Revised Environmental Impact Report to recognize the legal authority of Santee residents.

I109-2

Placing a 3,000-unit project with significant traffic flows will have impacts into a Cal Fire-identified severe-fire hazard zone could be a tragic risk to new and existing residents that will overwhelm the only two exits used for evacuations. The development application should be withdrawn/abandoned, and the land reverts to the conservatorship of the Department of Defense military base buffer program.

Thank you,

Richard Mutch (Veteran, Patriot, Opinionated)

Santee Resident since 1960

I109-1: The comment states that Measure N was passed to allow Santee residents to make a final decision on Fanita Ranch and asserts that the Final Revised EIR should be re-noticed. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of the information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

I109-2: The comment states that placing the proposed project with traffic impacts in a severe fire hazard severity zone is a significant risk to new and existing residents that must use the same routes for evacuation. This comment recommends that the proposed project be abandoned and that the land be permanently conserved through the Department of Defense military base buffer program (REPI). Please refer to response to comment I3-2.

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Comment Letter I110: Michael Ranson, July 25, 2022

From: Michael Ranson
To: Chris Jacobs
Subject: Fanita Ranch Final Revised EIR
Date: Monday, July 25, 2022 2:40:51 PM

RE: Recirculated Sections of the Final Revised Environmental Impact Report for Fanita Ranch (SCH# 2005061118)

Hello Mr. Jacobs:

I will keep my comments brief given that I provided extensive comments regarding this project during the first circulation of the EIR. I support the project knowing that it will personally impact me by increasing the size of the road (Fanita Parkway) directly behind my home.

Like most of the Santee residents commenting on this recirculation, I am not a fire or evacuation expert. However, I am very glad to see these issues being taken seriously by the judge that ordered this recirculation of sections of the EIR. This makes good sense to me. My hope is that this extra step and additional scrutiny of the fire and evacuation issues will make this project even safer than originally planned and satisfy the court. The homes provided by Fanita Ranch are needed for our City and our region. When people begin to occupy Fanita Ranch, other homes at lower and more affordable price points will become available. With the extra scrutiny of this recirculation, all people who choose to buy a home and live in Fanita Ranch can do so knowing that the has had the highest level of fire and evacuation analysis and approvals. Likely the greatest of any project in our state.

I110-1

A comment about "High Fire Danger Areas" and "sprawl". First, it seems to this non-expert that the area is a high fire area because there is no development on the property. My current home sits on land that was once high fire danger. I am guessing that most of Santee, with exception of the river corridor, sits on previously high fire danger areas. Second, sprawl is really open to the interpretation of the observer. If a person limits their thinking, I suppose they see this project as a development that sprawls out in the hills north of Santee. However, if a person views the area from a higher elevation and with a bit more of an open mind, it seems clear that this is an area of infill between the City of Santee, Scripps Ranch, Poway and Eucalyptus Hills.

The Fanita Ranch development is greatly needed to provide housing for our region. Again, thanks to this recirculation, those who choose to buy a home and live in Fanita Ranch can do so knowing that the has had the highest level of fire and evacuation analysis and approvals.

Thank you,
Michael Ranson
Strathmore Drive, Santee

I110

I110-1: This comment letter expresses support for the proposed project and the Recirculated Sections of the Final Revised EIR. The comment states that the proposed project will make fire and evacuation safer in the City and improve housing affordability. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I111: Steve Stelman, July 25, 2022

I111

From: Steve Stelman
To: Chris Jacobs
Subject: RE: Fanita Ranch Final Revised EIR (SCH# 2005061118)
Date: Monday, July 25, 2022 12:09:22 PM

I111-1 I am writing in opposition to the city of Santee's approval of the Fanita Ranch development project due to concerns that appropriate mitigation of wildfire and evacuation risks have not been properly addressed, and cannot be addressed by the current development plans.

I111-2 On a related note, I am also opposed to the city of Santee's disenfranchisement of the voters who successfully petitioned to have this matter determined at the ballot box. The removal by the city council from the November 2022 ballot of the question on amending the general plan as required by measure N, and the utilization of Ordinance 592 / Notice of Exemption (NOE) Fanita Ranch instead, is a disappointing end run around the council's responsibility to voters.

Steve Stelman

I111-1: This comment states the commenter's opposition to the proposed project due to concerns that mitigation of wildfire and evacuation risks have not been addressed. Please refer to Thematic Response 4 – Fire and Evacuation, specifically subsections 4a and 4b, which discuss proper evacuation planning and several emergency evacuation scenarios for the City and proposed project in the case of a wildfire. The Recirculated Section 4.18, Wildfire, concluded that implementation of the proposed project would result in less than significant impacts, and mitigation is not required.

I111-2: This comment states that the commenter is opposed to the utilization of Ordinance 592 to remove the proposed project from the November ballot and supports Measure N. Measure N does not apply to the proposed project. Please refer to Thematic Response 2 – Referendum and Measure N Applicability and Thematic Response 3 – Urgency Ordinance No. 592 and General Plan Consistency. This comment does not raise a significant environmental issue regarding the adequacy or accuracy of information provided in the Recirculated Sections of the Final Revised EIR. Therefore, no further response is required.

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Comment Letter I112: Alexander Whipple, July 25, 2022

I112

From: Alexander Whipple
To: Chris Jacobs
Subject: Fanita Ranch Public Comment Submission
Date: Monday, July 25, 2022 2:24:59 PM

I112-1 The EIR states that other communities have successfully survived wildfire occurrence, yet I would argue that Santee is a very different community than the ones cited. Attitudes and norms of behavior will factor into the success of any evacuation plan. These differences have not been acknowledged, nor addressed adequately within the EIR.

I112-1: This comment states that the City compared the project to other communities, but that the area is a very different community compared to other communities with wildfire risk, that attitudes and norms of behavior will factor into evacuation, and that these differences have not been adequately addressed in the Recirculated Sections. The comment does not explain how the City is different from other communities or how those differences might affect the analysis and conclusions provided in the evacuation analysis. As noted by the comment, the Fire Protection Plan (Appendix P1) provides several examples of similar, ignition-resistant and fire-hardened communities with FMZs that have performed very well in real wildfire scenarios. Refer to Sections 2.2.8 and 3.1 of the Fire Protection Plan. The analysis describes similarities between the proposed project and these communities based on a detailed review of the communities, their fire history, and proposed project requirements. The Fire Protection Plan has been prepared by local wildfire and evacuation experts who perform this type of work throughout California and have direct experience and professional ability to compare cities and projects. The comment does not raise any specific issue with the analysis in the Recirculated Sections or provide any evidence to the contrary. As to how norms and behavior were considered in the Wildland Fire Evacuation Plan

(Appendix P2) and evacuation modeling, please refer to response to comment I2-1 and Thematic Response 4 – Fire and Evacuation, specifically subsection 4b, which explains the various evacuation modeling scenarios performed for the proposed project and City. The Evacuation Plan and model incorporated real-time fire behavior and human behavior response to an emergency situation that are based on evacuation experiences within San Diego County. Therefore, the issue has been adequately addressed in the Recirculated Sections of the Final Revised EIR.

From: Save Fanita
To: Chris Jacobs
Subject: Fanita Ranch FREIR - PWS Exhibit 1-10
Date: Sunday, July 24, 2022 4:06:51 PM
Attachments: PWS Exhibits 1-10 Fanita FREIR July 2022.pdf

PWS Exhibits 1 of 7 emails for Exhibits 1-34 to Preserve Wild Santee letter July 2022

MORE FROM PLANET

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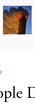

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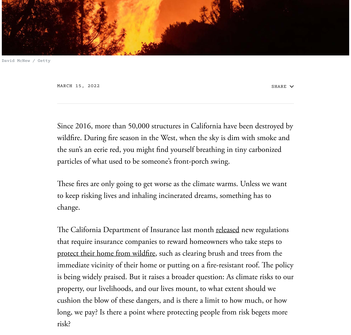
SCIENCE

People Deserve to Know Their Houses Are Going to Burn

The old way of insuring against fires isn't working anymore.

By Emma Marris



David McNew / Getty

MARCH 15, 2022

SHARE

Since 2016, more than 50,000 structures in California have been destroyed by wildfire. During fire season in the West, when the sky is dim with smoke and the sun's an eerie red, you might find yourself breathing in tiny carbonized particles of what used to be someone's front-porch swing.

These fires are only going to get worse as the climate warms. Unless we want to keep risking lives and inhaling incinerated dreams, something has to change.

The California Department of Insurance last month released new regulations that require insurance companies to reward homeowners who take steps to protect their home from wildfire, such as clearing brush and trees from the immediate vicinity of their home or putting on a fire-resistant roof. The policy is being widely praised. But it raises a broader question: As climate risks to our property, our livelihoods, and our lives mount, to what extent should we cushion the blow of these dangers, and is there a limit to how much, or how long, we pay? Is there a point where protecting people from risk begets more risk?

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California makes a good case study because it leads the nation in both annual number and extent of wildfires. Climate change—no surprise—is making things much worse. Eighteen of the 20 largest fires in California history have happened since the turn of the millennium—12 of them since 2016.

Mark Bove, a meteorologist and the senior vice president of natural-catastrophe solutions for Munich Reinsurance America, told me that the California-wildfire situation was rocking the insurance industry. "We are trying to figure out this new landscape along with everybody else," he said. "All the premium earned over three decades of writing business was gone in the wine-country and Camp fires." One estimate, from the actuarial firm Milliman, penciled out that two years of fires undid 26 years of profits for the state's insurers. (Insurers themselves, though, were insulated in part from these losses by their own reinsurance.)

Insurance companies are prohibited by state law from using models of future conditions to set their rates, but with the fires of the past five or so years, even backwards-looking risk calculations are beginning to prompt insurers to raise rates or refuse to renew policies. Some areas are becoming so risky that insurance companies simply won't sell policies here.

Read: The West has never felt so small

In 32 states, rejected homeowners can always get coverage through programs known as FAIR plans—insurance pools run collectively by every company offering homeowner's insurance in the state. The companies are legally required to participate and split any losses. A FAIR plan must insure everyone—no matter where a house is built—though their policies tend to cover only the most catastrophic losses. The number of Californians insured under the state's FAIR plan in 2020 was 241,466. That's 2.7 percent of the state's homeowners, up from 1.7 percent in 2015. The percentage is expected to be even higher for 2021.

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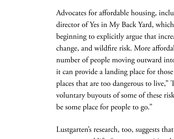

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As more and more homeowners in fire-prone areas migrate to these stopgap plans, a "FAIR plan is gradually ceasing to be just a temporary solution," according to an analysis by Devika Hazra and Patricia Gallagher, economists at California State University in Los Angeles. And their March 2022 paper shows that FAIR-plan premiums in Los Angeles County simply do not reflect the real risk—they are more influenced by factors such as the bed-to-bath ratio of a house than how likely it is to go up in flames.

These policies send an unrealistic message to homeowners about how much risk they are taking on. The premiums look normal, so it feels normal to live there. Homeowners don't hear "Your house is so likely to burn that it is uninsurable." In that way, a FAIR plan is "a form of lying to the public," according to Abrahm Lustgarten, an investigative journalist at ProPublica who is currently writing a book on climate migration in the United States.

Hazra and Gallagher recommend that insurers be allowed to set rates that reflect the real risk, based on climate models. But they know that the rich, who can afford the premiums or absorb the losses, will simply shrug and build anyway, while the poor will be squeezed at a time when housing in less risky parts of the American West—like coastal cities—is almost comically unaffordable.

People who live in the "wildland urban interface," or WUI, are a socioeconomic mix. Second homes and mansions with lovely views are built next to tracts of housing aimed at people who can't afford the city center and are forced to "drive until they qualify." The result is the "intermingling of two different crises," Hazda says—"the wildfire crisis and the housing crisis in L.A."

Read: We're heading straight for a demi-armageddon

"Making the FAIR plan more expensive, you are going to end up punishing a bunch of other folks that have no other option and are at risk of defaulting on their mortgage," the environmental-policy expert Matt Auer, from the University of Georgia, told me. If people are exposing themselves to risk simply because they want to, using insurance policy to make it expensive or impossible to do so sounds like a great idea. But when people are moving to risky areas out of necessity, the same policies could instead seem cruel.

One way to try to thread the needle would be to limit FAIR-plan coverage to primary residences, or to charge extra for coverage on second homes. Another would be to structure premium rates into tiers, like progressive taxes, so that the most extravagant homes in the WUI subsidize protection for low-income housing. California could also consider providing the FAIR-plan option only for existing housing stock—a policy that might freeze new construction in some areas. Each of these options could help. But the galaxy-brain solution might just be to provide lots of affordable housing options in the urban core.

Advocates for affordable housing, including Sonja Trauss, the executive director of Yes in My Back Yard, which is based in San Francisco, are beginning to explicitly argue that increased urban density can mitigate climate change, and wildfire risk. More affordable housing in the city will reduce the number of people moving outward into the WUI for economic reasons. And it can provide a landing place for those moving back in. "There are probably places that are too dangerous to live," Trauss says. She supports gradual voluntary buyouts of some of these riskiest zones. But, she adds, "there has to be some place for people to go."

Lustgarten's research, too, suggests that to avoid repeated catastrophic losses of property and life, "our communities should become more dense and should pull back a little bit from wildland interface areas." But Lustgarten realizes that not everyone can leave, or will want to. So we'll also need to "invest heavily in building better, more resilient structures" and manage landscapes better.

Many of the West's most flammable landscapes are deeply meaningful to people who are connected to the place they live by livelihood or cultural community. The WUI is cluttered with ticky-tacky homes banged up to cream profits off the bonkers housing market, but where the city grades into the country, you can also find tribal homelands, little towns that have been there for generations, working forests, and cattle ranches—places that would break your heart to leave if you were from there.

Staying means rethinking how we pool risk. Our modern insurance system rests on contracts between individuals and businesses, but Matt Auer has studied cases where communities took on collective hardening actions—cleaning up fuels that encircle whole neighborhoods, sending a free truck around to remove woody debris from yards, ensuring enough water is available for firefighters when they crack open a hydrant. He found that successful community-fire-protection plans tended to involve "collaborations between different levels of government and with non-state actors," including nonprofits and homeowners' associations.

Mark Bove, from Munich Reinsurance, said that community-level insurance pools and community action to reduce fire risk are the hot new trends in the insurance industry. "In California, a home could be one meter from the property line and your neighbor's house can be one meter from the property line, which means the house is six feet away. You can have house-to-house spread. You can't just look at this at the individual house level. You need the whole community looking at this."

California's new mandatory insurance discounts for hardening do include provisions for "community-level mitigation efforts," such as "driveway and roadway widths that facilitate evacuations and firefighting efforts, and a community-wide landscape and vegetation plan that is approved by the local fire district." In some ways this new focus on community-level action springs from the same premise as insurance itself, the for-profit version of which evolved in the Middle Ages from a preexisting landscape of religious societies, social clubs, guilds, and other groups that practiced mutual aid.

As a 1601 English insurance act puts it, "the loss lighteth rather easily upon many than heavily upon few."

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tion to avoid being hit by the retardant or water.

Most drop hazards can be avoided if firefighters move out of the drop zone. If firefighters cannot leave the drop zone, they should immediately lay face down on the ground, spread eagle, facing the oncoming aircraft, while holding their hard hat on their head and maintaining control of their hand tool. Stay alert immediately after a drop for hazards that can pose serious threats including rolling rocks, falling vegetation, and slippery surfaces.

Occasionally, an air tanker will drop retardant from an altitude low enough to dislodge vegetation and rocks, damage structures and vehicles, and injure ground personnel. Immediately report low drops to the ATGS through the chain of command to correct the action.

Helicopter rotor wash may be powerful enough to dislodge fire-weakened trees or snags, raise dust, and dislodge small rocks. The turbulence from rotor wash and wingtip vortices may adversely affect fire behavior.

Other hazards associated with helicopters include cargo sling loads and crew transportation. Firefighters should avoid drop zones during bucket drops and helispots during cargo sling load operations in case the aircraft malfunctions and the pilot jettisons the bucket or sling load.

Helitack crew personnel are in charge of all aspects of crew transportation from load calculations to loading and unloading personnel. Firefighters transported by helicopter must pay attention to and follow the orders from any helitack crew member.

Figure 10.30. An aggressive direct attack at the fire's edge with "one foot in the burn" is one of the safest places for firefighters on a WUI incident.

SURVIVAL OPTIONS

In the event firefighter safety is compromised and a decision is made to take shelter from direct flame impingement, radiant or convective heat, or superheated air or gases, four options are available to firefighters depending on the situation: escape routes, temporary refuge areas, safety zones, and shelter deployment zones. Coupled with vigilant situational awareness and contingency planning these options give firefighters a safety edge during WUI operations.

Escape Routes

An escape route is an identified route used to withdraw from a tactical work area to a pre-determined safety zone or temporary refuge area.

When identifying escape routes, consider the distance between the tactical work area and the safety zone or TRA, and the amount of time it will take to travel between the two. Base withdrawal times on the slowest person's travel rate, fatigue, and the effects of high temperature.

Travel time should also be commensurate with the rate of fire spread. Firefighters must be able to reach the safety zone or TRA well in advance of the fire.

Figure 10.31. Infrastructure compounds may provide a suitable safety zone in the WUI. They should be scouted, evaluated and and announced to adjoining resources prior to need.

Ideally, firefighters should identify more than one escape route in the event that one becomes compromised. As resources move within their tactical work area, escape routes must be reevaluated and reestablished as needed.

Travel on Foot

The escape route should be clear of obstructions that could hinder a safe and hasty withdrawal. Scout potential routes for loose soil, rocks, and heavy vegetation. Avoid steep uphill escape routes.

Escape routes on foot could include driveways, roads, sidewalks, or walking paths. Escape routes might also follow the fire line, a dozer line, or a hose lay path. If no clear route exists, firefighters will need to cut a path through vegetated areas along the most direct route to the safety zone. Clearly mark all escape routes for daytime and nighttime visibility.

Safety Zone
A pre-planned area of sufficient size and suitable location that is expected to protect personnel and equipment from known hazards without using fire shelters.

When withdrawing along escape routes by foot, ensure that travel time and distance to the safety zone are realistic based on terrain, fire behavior, environmental factors, and personnel capabilities.

Travel by Vehicle

In the WUI environment, firefighters often travel escape routes by vehicle. Park vehicles faced toward the escape route; leave the engine running with the headlights on. Do not park vehicles or plan escape routes under areas with power lines.

Figure 10.32. A safety zone can be a natural clearing or an improved site.

When multiple engines are working in the same tactical area, a Strike Team Leader or Division or Group Supervisor needs to preplan emergency egress to coordinate all resources prior to withdrawal. Emergency egress should be well-timed and orderly to avoid congestion and accidents.

When withdrawing along escape routes by vehicle, there is less emphasis on the proximity of the

safety zone to the tactical work area. Travel and time and distance should be based on road conditions, the number of vehicles using the same escape route, and the potential for congestion or accidents along the route.

Safety Zones

A *safety zone* is a pre-planned area of sufficient size and suitable location that is expected to protect personnel and equipment from known hazards without using fire shelters. Every incident must have one or more identified safety zones.

The size of the safety zone is determined by the observed maximum flame height. The Incident Resource Pocket Guide (IRPG) states that separation distance between the firefighter and the flames should be a minimum of four times the maximum continuous flame height. Distance separation is the radius from the center of the safety zone to the nearest fuels.

IRPG RECOMMENDED SAFETY ZONE DISTANCE AND SIZE*

Flame Height	Separation Distance (from firefighters to flames)	Area in Acres**
10 feet	40 feet	1/10 acre
20 feet	80 feet	½ acre
50 feet	200 feet	3 acres
100 feet	400 feet	12 acres
200 feet	800 feet	46 acres

*Calculations are based on radiant heat only and do not account for convective heat from wind and/or terrain influences. Since calculations assume no wind and no slope, safety zones downwind or upslope from the fire may require larger separation distances.

**Area in acres is calculated to allow for distance separation on all sides for a 3-person engine crew (1 acre is approximately the size of a football field, or 208 feet by 208 feet).

Escape time and safety zone size requirements will change as fire behavior changes. If the fire has the ability to burn completely around the safety zone, this distance must be maintained on all sides of the safety zone, meaning the diameter should be twice the value indicated above. Convective heat from wind or topographic influences will increase this distance requirement. Firefighters should remember that safety zones should be large enough to accommodate fire apparatus in addition to all personnel.

Figure 10.33. Apparatus should be parked in a safe area should the need arise to use the vehicle as a TRA.

Safety zones that meet the IRPG criteria (four times the flame height) are rarely present in the WUI, where housing density and small parcel sizes preclude the existence

of large open areas. It is also difficult to construct adequate safety zones in the WUI without destroying residential improvements, however there are areas that can function as a safety zone:

Potential safety zones:

- Any area without flammable vegetation (rock slide, bodies of water, wet meadows, cleared open space, greenbelts)
- Large parking lots
- School/athletic fields
- Parks with open grass areas
- Previously burned areas with no flammable overstory (canopy)

If firefighters are unable to withdraw along an escape route to a safety zone they should withdraw to a temporary refuge area (TRA) until it is safe to either move to the safety zone or return to their task.

Temporary Refuge Areas

Temporary Refuge Area
A pre-planned area where firefighters can immediately take refuge for temporary shelter and short-term relief without using a fire shelter.

A *temporary refuge area* is a pre-planned area where firefighters can immediately take refuge for temporary shelter and short-term relief without using a fire shelter. Anything that protects firefighters from radiant or convective heat should be considered a temporary refuge area.

The purpose of the TRA is to have a predetermined rally point identified that firefighters can reach quickly and reassess their situation. If it is determined that the TRA will not provide sufficient protection from the fire's potential then firefighters should immediately withdraw along their escape route to the safety zone, or in a worse case deploy their fire shelter. Anytime there is doubt about the safety of the crew, firefighters should immediately attempt to withdraw.

Figure 10.34. Cul de sacs are excellent choices for TRAs for personnel and equipment.

Temporary refuge areas may not provide adequate safety and protection for the entire duration of need because of changing fire conditions, especially during periods of extreme fire intensity.

A temporary refuge area does not meet all of the requirements for a safety zone, but will provide an acceptable margin of safety for short periods of time. Unlike a safety zone that may be some distance away from the tactical work area, a temporary refuge area should always be on-site so that firefighters can quickly secure short-term relief from unexpected flare ups or adverse changes in fire behavior.

A temporary refuge area is not a replacement for an identified safety zone. A temporary refuge area always requires another planned tactical action in the event

the temporary refuge area becomes unsafe. All personnel must be able to identify their safety zone(s).

Firefighters who take shelter in a temporary refuge area must have a contingency plan in place in the event they are forced to abandon their position.

For example, firefighters taking temporary refuge inside a structure must plan their next move in case the structure begins to burn and they cannot remain inside. This may mean moving to a vehicle or engine, sheltering behind a wall or rock outcropping, or as a last resort, deploying shelters.

Always Have an Exit Strategy

- Employ tactical maneuver to avoid injury, move away from the fire
- Move to a temporary refuge area
- Withdraw along an escape route
- Move into a safety zone

Potential temporary refuge areas:

- Large turnouts, cul-de-sacs, or parking lots
- On-site greenbelts, meadows, pastures, large lawns
- Lee side of structures
- Inside apparatus
- Inside structures

Based on the fire conditions at any given time, some options will be safer than others. The best option is the one that offers the greatest chance for survival.

When using a temporary refuge area, the crew should stay together, keeping close account of all crew members. Firefighters should follow crew leader/supervisor directions and maintain contact with their fire line supervisor. Provide supervisors with situation details, an accurate description of the location, and how to access it. Request ground and/or air support and rescue resources if needed.

When the threat subsides, personnel should evaluate one another for injuries and provide treatment as necessary. Update the appropriate fire line supervisor of the crew's status and any additional resource needs. If appropriate take suppression actions on the structure or surrounding vegetation. When safe to do so, reengage or move to the safety zone, depending on conditions.

A review of near-miss and fatality fires reveals that many wildland firefighters have abandoned or ignored temporary refuge areas offering suitable protection from radiant and convective heat while

Esperanza Fire (Riverside County, CA) - October 2006

During the Esperanza Fire an engine crew successfully used its engine as a temporary refuge area minutes before a sustained fire run caused multiple firefighter fatalities. While the fire front pushed past structures, the engine crew used the engine to avoid blowing embers, extreme fire conditions, and high winds.

en route to a safety zone. Some wildland firefighters have been killed or injured in chutes, saddles, or areas of thick vegetation while en route to a safety zone when they could have waited a minute or two in a temporary refuge area prior to moving through a more dangerous area to access the safety zone.

Using Apparatus as a Temporary Refuge Area

As a temporary refuge area, a vehicle can provide tactical mobility as well as limited protection from radiant heat, blowing embers and dust, smoke, and other hot gasses.

When determining whether or not to use a vehicle as a TRA, consider:

- Fire behavior, intensity, and rate of spread
- Vegetation clearance around the vehicle
- Fuel type (grass vs. heavy fuels) and loading
- Duration of exposure to heat and direct flame impingement
- Proximity to concentrated heat sources

Figure 10.35. Location is critical when an engine is used as a TRA. Operators must be prepared for an alternate tactical action should conditions deteriorate.

To prepare a vehicle for use as a temporary refuge area, firefighters should:

- Park the vehicle facing in the direction of the escape route
- Run the engine at a high idle to prevent stalling(1,000 rpm minimum)
- Close all windows
- Deploy fire shelters over windows if necessary
- Turn on all lights including headlights and emergency lights
- Be prepared to remove deployed hose lines
- Take structure fire PPEs, SCBAs and drinking water into the cab
- Be prepared to move the vehicle to the safety zone as conditions permit
- Notify supervisor that vehicle is being used as a temporary refuge area

Using a vehicle as a temporary refuge area requires another planned tactical action in the event that conditions deteriorate. The vehicle operator must be prepared to move to another temporary refuge area or use an escape route to withdraw to a safety zone if safe to do so.

Recent studies have shown that when exposed to periods of intense heat, conditions inside the cab of a fire apparatus may become untenable. Door handles made of plastic may fail, plastic components such as seats, and door panels may give off toxic fumes, windows may fail. If these conditions occur, firefighters may need to:

- Move the apparatus to a safety zone
- Abandon the apparatus and move on foot to the safety zone via the escape route
- Abandon the apparatus and deploy shelters outside the cab or move to a safer location to deploy

Firefighters must be aware of their surroundings and if these conditions are present they will need

to quickly move to abandon the apparatus taking with them as many survival tools as described above (SCBA, fire shelters, turnouts, etc.). Some agencies may have a policy that precludes the use of the vehicle as a refuge.

Using a Structure as a Temporary Refuge Area

A structure can provide some protection from radiant and convective heat, blowing embers and dust, smoke, and other hot gasses.

Figure 10.36. When using a structure as a TRA, another planned tactical action is required should the structure ignite.

When determining whether or not to use a structure as a temporary refuge area, consider:

- Fire behavior, intensity, and rate of spread
- Flammable construction features
- Vegetation clearance around the structure
- Fuel type (grass vs. heavy fuels) and loading
- Duration of exposure to heat and direct flame impingement
- Proximity to topographic features (chimneys, drainages, slopes, ridges)

To prepare a structure for use as a temporary refuge area, firefighters should:

- Close all windows and doors
- Remove flammable materials from windows
- Close heavy drapes
- Turn on all lights, even during the daytime
- Apply a Class A foam or gel on the structure's exterior (time permitting)
- Fire around the structure (if appropriate)
- Deploy hose lines and garden hoses through openings on the least involved side
- Take structure fire PPEs, SCBAs, and drinking water into the structure
- Enter the structure and move to the furthest point from the fire
- Identify alternate exits
- Notify supervisor that structure is being used as a temporary refuge area

Using a structure as a temporary refuge area requires another planned tactical action in the event that conditions inside the structure deteriorate. Firefighters must be prepared to leave the structure to move to another temporary refuge area or use an escape route to withdraw to a safety zone if safe to do so. Do not use a structure as a substitute for identifying and utilizing viable escape routes and safety zones.

Shelter Deployment Zones

Shelter deployment zones are areas where firefighters deploy fire shelters as a last resort to avoid injury or death. Use a shelter deployment zone when fire conditions compromise escape routes,

temporary refuge areas, and safety zones. Shelter deployment zones are only used when there is no other alternative for survival.

When choosing a shelter deployment zone avoid topographical features that funnel heat and smoke (chimneys, drainages, saddles), heavy vegetation, snags, and concentrated heat sources (burning structures, piles of debris). Seek out flatter areas, or the lowest point available, with minimal vegetation and choose a surface that allows the fire shelter to seal itself to the ground.

When deploying a shelter:

- Stay together and maintain communication
- Clear surface vegetation from a 4x8 foot area for each shelter
- Enter the fire shelter before fire front impact
- Lay face down with feet positioned toward the fire
- Keep face close to the ground and protect airway
- Secure the fire shelter

Sheltered firefighters should anticipate:

- Extremely heavy ember showers
- Superheated air blasts preceding fire front arrival
- Deafening noise
- Powerful turbulent winds striking the shelter
- A fiery orange glow inside the shelter
- High temperatures
- A lengthy stay
- Injuries

Sip water and maintain communications with supervisors and other sheltered firefighters. Communication is critical for maintaining morale, composure, and safety. Firefighters should be prepared to move around within a deployment zone to minimize exposure to radiant heat or other hazards such as burning vehicles or falling trees or power poles. When moving to another location, airway protection is vital for survival.

Figure 10.37. Although considered a last resort for shelter deployment, bodies of water such as swimming pools, lakes, ponds, rivers and creeks should not be overlooked as potential deployment zones.

Deploying a Shelter in a Body of Water

Although firefighters should never plan to deploy in bodies of water, they can serve as a last resort deployment zone.

Water Deployment Zones

- Swimming pools
- Lakes
- Ponds
- Rivers
- Streams
- Creeks
- Wet boggy areas

Seven Oaks Fire (Inyo County, CA) - July 2007

When nine firefighters were overrun by the Seven Oak Fire, they sought refuge in a small 60- by 40-foot pond where they deployed their fire shelters for protection. All nine firefighters walked away from this potentially deadly entrapment with relatively minor injuries.

If firefighters decide to enter a body of water for shelter deployment they should discard their tools, remove heavy packs, and enter the water with their fire shelters ready to deploy.

Entering the body of water does not protect the airway from radiant and convective heat if the head is exposed to the fire environment. To protect their airways, firefighters must keep their heads above water and deploy their shelters. By resting the fire shelter on top of their hard hats and holding the shelter's sides down underneath the water, they can create a seal between them and the fire environment. In this scenario it is possible for two or three individuals to share one shelter. Firefighters can also use the shelter as a shield to create a heat barrier if the radiant or convective heat is only impacting them from one direction.

Figure 10.38. Safety zones can be created during entrapment situations by firing out in light flashy fuels.

Water deployments should always be a last resort as they create additional safety risks due to possible swift currents, deep water, prolonged exposure to cold, electrocution from falling power lines, and hazardous material exposure. Not everyone knows how to swim and those who can will be hindered by heavy wet clothing and boots, increasing the chance of drowning.

Firefighters must evaluate all available options before deploying a fire shelter. If firefighters choose a water feature as the best alternative, they should be prepared for the challenges of deploying in water.

ENTRAPMENT

Entrapment describes a situation where personnel are unexpectedly caught in a fire behavior-related life-threatening position where planned escape routes and safety zones are absent, inadequate, or have been compromised.

Entrapment occurs when firefighters are unable to avoid fire front impact. In this situation, firefighters have two options: take shelter in a temporary refuge area (a sheltered area, a structure, a vehicle) or resort to fire shelter deployment.

Contributing factors that lead to entrapments on WUI incidents include:

- Exposure to carbon monoxide compromising the decision-making process
- Heat injury
- Poor selection of escape routes and safety zones
- Failure to understand assignment
- Lack of LCES
- Failure to recognize and react to changing fire conditions or dangerous situations
- Lack of understanding of fire behavior
- Extreme fire behavior events
- Poor visibility due to terrain, fuels, or smoke
- Trying to outrun a fire going uphill
- Setting a backfire or burning out in a manner that jeopardizes adjoining forces

To increase the opportunity for survival during entrapment, firefighters can:

- Physically position themselves to best withstand fire front impact
  - Avoid dangerous topographic features and other hazards
  - Seek out the most level terrain available
  - Avoid heavy fuel loading
  - Maximize heat shielding using embankments, structures, vehicles, or large rocks
- Consider firing out around the location (time permitting)
- Contact their supervisors and request assistance
- Protect their airways
  - Breathe shallow
  - Stay close to the ground
- Maintain communication and command presence

Figure 10.39. Entrapment avoidance means planning for what COULD happen by parking equipment in safe areas for temporary shelter or escape.

After the fire front passes, firefighters should account for all personnel and administer or seek medical assistance. Provide the immediate supervisor with a crew status update including any additional resource requests. After any entrapment, the IC should initiate

an investigation and consider the need for critical incident stress debriefings.

While all entrapments are potentially life threatening, not all lead to injury and death. Firefighters can survive, and even avoid entrapment, by utilizing established safety tools and survival sites.

Utilizing the safety tools and concepts outlined in this chapter with a strong emphasis for firefighters to use the Risk Management Process, 10 Standard Fire Orders, the 18 Situations that Shout Watch Out, and LCES combine to keep safety in the forefront of fire operations, reducing entrapments, injuries, and fatalities.

Entrapment Lessons Learned

Entrapment has led to firefighter deaths and injuries, and fire apparatus damage or destruction. Past accidents and near misses have resulted from firefighters failing to:

- Correctly forecast fire behavior
- Recognize extreme fire indicators
- Assign competent lookouts
- Maintain communication with all personnel
- Identify adequate escape routes and safety zones
- Follow one or more of the 10 Standard Firefighting Orders
- Identify one or more of the 18 Situations that Shout Watch Out
- Maintain situational awareness
- Utilize proper PPE
- Resist public pressure or emotion leading to dangerous tactical decisions

Entrapment Avoidance

Entrapment avoidance is a clear priority on any wildland fire but even more so during a WUI incident where citizens evacuating the tactical area, numerous emergency vehicles traveling in different directions, and the specter of homes burning and extreme fire behavior are distractions that can easily compromise situational awareness. The adage "Expect the unexpected" has never been more apply applied than in the WUI theater. Entrapment avoidance means anticipating what might happen. Training, experience and instinct combine to form a skill set critical for entrapment avoidance.

Skills needed to avoid entrapment:

- Heightened situational awareness
- Anticipation of changes in fire behavior
- Selection of safe, effective strategy and tactics
- Decisive tactical engagement, when or when not to engage
- Establishment and monitoring of realistic decision points
- Recognition of good safety zones, escape routes and TRAs

There are numerous safety tools available to all firefighters to help build this skill set:

- Assess potential risks using the Risk Management Process

- Know and follow the Ten Standard Firefighting Orders
- Know and recognize the 18 Situations That Shout Watch Out
- Know and recognize the Common Denominators of Fire Behavior on Tragedy Fires
- Ensure that LCES is used throughout the entire engagement
- Use the Look Up, Look Down, Look Around indicators for fire behavior forecasts

Entrapment avoidance means seeing, not just looking; listening, not just hearing:

- Always monitor the air to ground frequency assigned to the incident for alerts of hazardous situations
- Avoid long drawn out radio conversations
- Use only radio frequencies assigned to the incident
- Monitor the weather by recognizing changes in the wind, temperature and relative humidity; watch for thunderstorm development or other cloud types indicating a possible weather change

Above all, heightened situational awareness is crucial for entrapment avoidance:

- Stay focused
- Avoid distractions
- Filter unnecessary information
- Always have contingency plans in place
- React decisively to adverse situational changes
- Establish decision points and triggering events for disengagement or retreat

These entrapment avoidance skills and tools should be applied to any discussion or analysis of fatal or near miss fires.

THE SCIENCE AND ART OF FIRE SUPPRESSION

Fire suppression is both a science and an art, combining knowledge and skill with intuition and instinct. Firefighters are consistently challenged with balancing these elements in their day-to-day operations. When it comes to life and death situations, firefighters have a matter of seconds to make a decision based on experience, training, current conditions, and personal conviction.

The more command presence, situational awareness, fire behavior forecasting, structure triage, strategy and tactics, and operations in the WUI environment are understood, the more prepared firefighters will be to make that decision.

million; 5,394 structures were destroyed; and more than 23 people lost their lives as a result of California wildfires.

- More than 5 million homes are currently located in California's WUI. As more homes are built within these areas, the danger to life and property will continue to increase, unless significant action takes place to prevent these fires or mitigate the damage and injury caused by fire.

Commissioner Poizner and Director Grijalva's primary goals are to reduce the loss of life and large-scale property damage/losses from wildfire, and to increase awareness of fire officials, the insurance industry and the public on methods and ways to prevent and mitigate wildfire losses.

IBHS is deeply concerned about California's growing wildfire threat, as well as the increasing wildfire threat in dozens of other states. We believe that the research findings in this study and the resulting recommendations will add substantially to the scientific body of knowledge available regarding methods to prevent and mitigate wildfire losses. The goal of this report is to share our research findings as a way to contribute to local and national discussions about ways to reduce vulnerability to wildfires, minimize losses and make our communities safer and more resilient.

MAJOR FINDINGS AND RECOMMENDATIONS

The major findings of the study are:

- **HOMES WITH THE HIGHEST RISK OF BURNING ARE THOSE ADJACENT TO WILDLAND SITUATED ON THE PERIMETER OF HOUSING DEVELOPMENTS.** In this study, properties positioned along the edge of a housing development, which was located on the windward side or along a side that ran parallel to the prevailing direction of the Santa Ana winds, were exposed to a substantially higher risk of being destroyed. While the increased risks varied from community to community, it was generally found that properties along these edges were nearly twice as likely to burn as properties on the first row back from the edge and three to eight times more likely to burn than homes further back in a housing development.

- **INTERIOR HOMES SITUATED LESS THAN 15 FEET APART ARE AT HIGH RISK FROM WILDFIRE.** While homes adjacent to wildland are most vulnerable to wildfires, homes in the interior areas of housing developments that were located less than 15 feet apart, were much more likely to burn in clusters – in other words, multiple homes right next to each other tended to burn. This finding elevates the importance of a community-wide approach to protecting properties against wildfire where the density of homes is high, and it also emphasizes the potential threat posed by neighboring properties. Cluster-burning was not witnessed in homes located more than 45 feet apart from each other.

- **ALL HOMES, REGARDLESS OF THEIR VALUE, CAN BE BEST PROTECTED FROM WILDFIRE BY IMPLEMENTING APPROPRIATE LOSS REDUCTION MEASURES.** The value of a home was not found to be a major factor in the risk that it would burn. In the study communities, there was a relatively even distribution of the percentage of homes that burned across a wide range of home values. This suggests that any home can be protected by taking the proper steps.

- **THE REQUIREMENTS ESTABLISHED IN THE NEW 2007 CALIFORNIA BUILDING CODE WILL BE EFFECTIVE IN REDUCING LOSSES AND DAMAGE FROM WILDFIRES.** San Diego County, which adopted progressive codes in 2001 and strengthened those codes in 2004, experienced lower burn rates in homes built to these wildfire property protection standards in unincorporated areas, according to an analysis conducted by the county after the 2007 fires. The 2004 San Diego County standards were reflective of the strict requirements of the new state code.

- **THE REQUIREMENTS ESTABLISHED BY SHELTER-IN-PLACE (SIP) COMMUNITIES ARE**

Total Number of Houses

The high-resolution aerial photos only covered a portion of the entire fire perimeter. As such these counts only represent part of the total population of homes within the fire perimeter.

The San Diego County Department of Planning and Land Use conducted a full count of properties within the unincorporated area of the fire perimeter. This count identified the total population of homes and determined which of the burned homes were built according to 2001 and 2004 building codes. These findings are represented in Table 2. Although the IBHS sample of homes in the aerial photos is somewhat representative of the total population, the burn rate of 10 percent was slightly lower for all homes as compared to the county's findings of 13 percent for all of the wildfires that affected the unincorporated areas of the county.

Similar statistics have been developed for the three comparison communities. The summary burn rate statistics for combined data from all three communities is shown in Table 3. Table 3 also contains a separate listing of house counts and percent burned for each of the three communities.

This data shows that there can be significant variation in the statistics on a community by community or development by development basis. Clearly, the risk is consistently greatest around the edges of the communities; but, there were enough homes burned within the interiors of the developments to call for increased vigilance by all homeowners regardless of the location of their property.

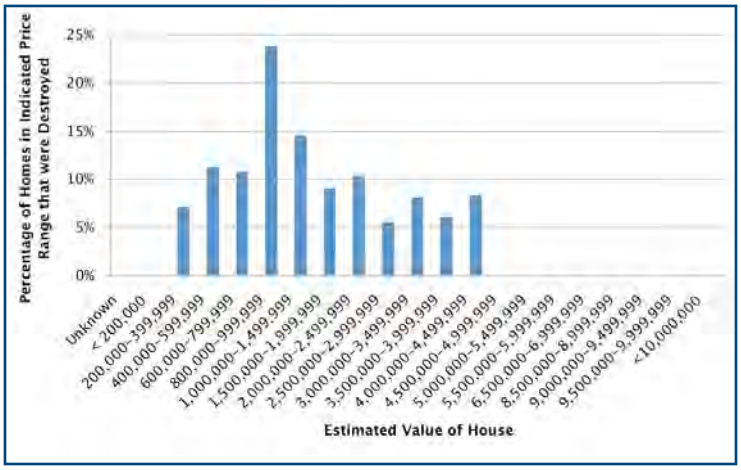
CLUSTER BURNING

Aerial photography was used to explore burn patterns in the study communities and the tendency of houses in certain communities to burn in clusters. The distance between each home and the closest adjacent home was measured for each house. Table 4 provides the results of the pattern analysis and lists the average minimum distance between homes in each of the communities.

Clearly, the minimum distance between homes is a major factor in the tendency for adjacent homes to burn. The general rule of fire science is that efforts should be made to keep high-intensity spot fires, which would include a burning house, from coming within at least 30 feet of a house to prevent damage. Therefore, it is not surprising that there was a tendency for homes in Community 1, where there is very little distance between homes, to affect each other.

At least 32 out of the 130 homes that burned in Community 1 would be considered initiation points for the fire, assuming at least one home in each cluster acted as a point of burn initiation for the destruction of that cluster.

This supports the recommendation that in densely packed developments it is particularly important for neighbors to work together to reduce their risks. IBHS researchers interviewed homeowners in Community 1 with houses that were still standing but located next to each of the burned homes. Without exception, each homeowner of a still-standing house had retrofitted their houses for greater wildfire protection. These actions include, but



VAL 1

Comparison of the percent of homes destroyed by value.

Published on *East County Magazine* (https://www.eastcountymagazine.org)

SANTEE COUNCIL REMOVES FANITA RANCH FROM NOVEMBER BALLOT; COLLINSWORTH CRIES FOUL

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June 2022 Articles

Santee Fanita Ranch

By Mike Allen

June 13, 2022 (Santee) -- After the Santee City Council voted last week to remove the Fanita Ranch project initiative from the November ballot, environmental activist Van Collinsworth called the move not only a slap in the face of local voters, but a clear message that the 3,000-unit development will never go to a vote.

The Council voted unanimously June 8 to take an earlier approved referendum on the project off the ballot because all pf the project's legal approvals were already rescinded last month. The Council removed those approvals made in 2020 to comply with a judge's recent ruling, which found the project's environmental impact report deficient.

That report did not include impacts of a last-minute change by the Council to eliminate a key exit route in case of a wildfire evacuation, a lapse which the court found violated the California Environmental Quality Act requirements.

Given the absence of the plan's amendments, a referendum on those ordinances "has no legal meaning," and rejecting the General Plan Amendments would be meaningless because that amendment has already been repealed, according to City Attorney Shawn Hagerty.

This interpretation didn't sit with either Collinsworth, the director of Preserve Wild Santee, or an allied environmental activist group, the Center for Biological Diversity, which both asserted that the referendum should take place as scheduled.

"I want the city to acknowledge that the people of Santee have earned the right to vote on this project," Collinsworth said. "They (the City Council) are doing everything they possibly can from allowing the people of Santee to decide on this project."

Attorney Peter Broderick of the Oakland-based Center for Biological Diversity wrote in a **letter** that the Council's legal rationale to remove the referendum was flawed. "Finally, allowing the voting public to weigh in on the Fanita Ranch Project through an up and down vote is a key aspect of participatory decision making and serves the underlying democratic purpose of California's constitutionally authorized voter referendum voting process," Broderick wrote.

The Council also noted that in addition to not having an actual plan for voters to decide upon, the cost for the issue on the ballot was about $180,000, and deemed excessive.

Collinsworth, who led an effort to challenge Fanita Ranch soon after the Council voted 4-1 to approve it in September 2020, said the council adopted another measure, Ordinance 592, in December that provides a special status for Fanita Ranch that precludes a public vote from ever occurring.

"It's a sham process," Collinsworth said. "We know what the City Council will do. They are bought and paid for."

Mayor John Minto said the ordinance Collinsworth refers to was intended to shorten the length of time for the development approval process for smaller housing projects. He said all development projects must comply with state regulations governing land use and cannot be excluded from the process.

As to charges that the council is in the pockets of Fanita Ranch developer HomeFed Corp., Minto said it is Collinsworth who is bought and paid for by large environmental organizations "to do everything he can to stop growth."

Collinsworth said the best outcome for the Fanita Ranch property is to keep the 2,600 acres north of Santee Lakes vacant as a natural preserve, and a buffer to the Marine Corps Miramar base. Yes, this region desperately needs affordable housing, but Fanita Ranch is luxury housing, he said.

Asked what he would do should Fanita Ranch plan come back to the council, Minto was reluctant to say how he'd vote. He noted that because the project would need an amendment to the city's General Plan, it would require a public vote. That was mandated in 2020 when Santee voters passed Measure N, which would put any project that needs an amendment to the existing General Plan on the public ballot for approval.

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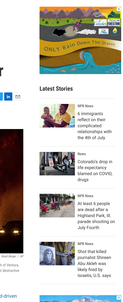

Fire-Resistant Is Not Fire-Proof, California Homeowners Discover

By Emily Guerin
Published December 5, 2018 at 5:57 AM MST

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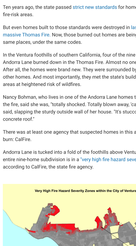


Noah Berger / AP

A motorists on Highway 101 watches flames from the Thomas fire loop above the roadway north of Ventura, Calif., in December 2017. Hundreds of homes were destroyed in what was then California's most destructive wildfire.

Nearly 200 homes in Ventura County are not keeping up with the severe, wind-driven wildfires that are becoming the norm.

Ten years ago, the state passed strict new standards for homes built in high fire-risk areas.

But even homes built to those standards were destroyed in last year's massive Thomas Fire. Now, those burned out homes are being rebuilt in the same places, under the same codes.

In the Ventura foothills of southern California, four of the nine homes on Andorra Lane burned down in the Thomas Fire. Almost no one expected it. After all, the homes were brand new. They were surrounded by dozens of other homes. And most importantly, they met the state's building codes for areas at heightened risk of wildfires.

Nancy Bohman, who lives in one of the Andorra Lane homes that survived the fire, said she was "totally shocked. Totally blown away 'cause look," she said, slapping the sturdy outside wall of her house. "It's stucco and a concrete roof."

There was at least one agency that suspected homes in this area could burn: CalFire.

Andorra Lane is tucked into a fold of the foothills above Ventura, and the entire nine-home subdivision is in a "very high fire hazard severity zone," according to CalFire, the state fire agency.

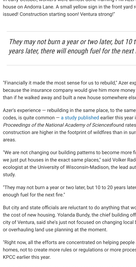
/ Courtesy CalFire / Courtesy CalFire

CalFire's "very high fire hazard severity zone" map of the City of Ventura. Areas colored red have very high fire risk. Andorra Lane is in one such area.

That's a technical term created by CalFire, and it applies to neighborhoods on the edge of undeveloped land, "the wildland urban interface" where severe wildfires are likely.

The term is important because, since 2008, all homes built in these zones have had to meet strict building codes designed to prevent them from catching on fire. They must have fire-resistant roofs and siding, fine mesh screen on attic vents to keep embers out, decks and patios made of non-flammable material, and heat-resistant windows.

Built in 2016, the houses on Andorra Lane had all of those things. They were supposed to have a better chance of surviving a wildfire than older homes that didn't have those protective features.



Noah Berger / AP / AP

Bret Ludwicher passes while sifting through rubble at her Ventura, Calif., home following the Thomas Fire in December 2017.

Always read the fine print

When the first residents of Andorra Lane moved into their houses in 2016 and 2017, few realized their homes were located in a risky place. But buried in their closing documents was a small disclosure, telling them they were moving into a "very high fire hazard severity zone."

"We flipped through hundreds of pages, I'm sure nobody ever reads the fine print," said Phil Azer, one of the four homeowners on Andorra Lane whose house was destroyed. "I think I was probably more concerned about earthquakes."

Living in Southern California has many hazards one could easily worry about. Earthquakes. Mudslides. Flash floods. Sinkholes. Tsunamis. Volcanoes. Meteorites. Sharknados.

Only recently have fire-resistant roofs and siding, fine mesh screen on attic vents to keep embers out, decks and patios made of non-flammable material, and heat-resistant windows.

Built in 2016, the houses on Andorra Lane had all of those things. They were supposed to have a better chance of surviving a wildfire than older homes that didn't have those protective features.

Noah Berger / AP / AP

Bret Ludwicher passes while sifting through rubble at her Ventura, Calif., home following the Thomas Fire in December 2017.

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Living in Southern California has many hazards one could easily worry about. Earthquakes. Mudslides. Flash floods. Sinkholes. Tsunamis. Volcanoes. Meteorites. Sharknados.

Hazards: The subdivider advises that the following hazards exist within or near this subdivision.

The Subdivider has advised that all or portions of the subdivision subject to the Seismic Public Report are located within a Very High Fire Hazard Severity Zone. Additionally, the Subdivider has advised that portions of adjacent land in the County are provided a wearable disclosure required under Government Code Section 51183.5

/ State Of Calif. Bureau Of Real Estate / State Of Calif. Bureau Of Real Estate

The fine print in the Andorra Lane Subdivision Public Report (Public Report / Andorra Lane Subdivision Public Report Item1.pdf)

"I don't think [the real estate agent] ever actually said, 'Hey, do you realize you're on a flood or fire zone, or anything like that?'" said Bohman.

The developer, Williams Homes, declined to comment.

So why did the houses burn?

Ventura city Fire Marshal Joe Morelli thinks topography played a role.

The narrow valley that Andorra Lane sits in may have acted as a wind tunnel, funneling embers towards the houses.

"Really what we had was something like a blow torch going through our city," Morelli said. "And even with the fire-resistant construction standards you can still have loss. They're not fireproof standards."

Researchers who study how houses burn down say it's embers that are responsible for burning houses down, not walls of flame.

When embers land on ornamental mulch, pine needles built up at the base of a wall or wooden deck furniture, they smolder. And those little fires can eventually ignite the house itself, even a fire-resistant house, especially if no one is there to put them out, as is usually the case in an evacuation zone during a megafire where firefighting resources are stretched thin.

The current California wildland fire codes may also have weaknesses, according to Morelli. They don't cover wooden sheds, carports, or backyard play structures, which can ignite, sending embers towards the house. Nor do they cover skylights that open outwards. And garage doors aren't as fire-resistant as they could be, meaning embers can get sucked underneath them, igniting whatever is inside.

Being new, the houses on Andorra Lane were likely some of the most fire-resistant houses in Ventura. And 89 percent had fire-resistant roofs.

It's where you build, not what you build

To fire ecologist like Alexandra Syphard with the Conservation Biology Institute, it's becoming increasingly clear that houses built in risky places are impossible to fire-proof.

"You can make a big difference in increasing the potential safety of your house but you can't guarantee that it's not going to burn," she said.

Her research has found that whereyou build your house, not what it's made of, is the biggest factor in determining whether it will burn.

And approving new development is done by counties, which often have a financial incentive to greenlight construction projects. The state tries to guide them to do the right thing, but "at the end of the day, it's up to the local jurisdiction to protect their citizens," said Pete Muñoz, CalFire's deputy chief of land use planning.

He says it's really only academics who are discussing giving the state more control over where houses are built in fire prone areas.

"They talk about that all the time," he said. "They shouldn't be building there, period, is what I've heard a few of the professors state. That's easier said than done. Where do you put those folks? And how do you compensate them for that?"

In early October, workers were almost done framing Phil Azer's replacement house on Andorra Lane. A small yellow sign in the front yard read, "Permits issued! Construction starting soon! Ventura strong!"

They may not burn a year or two later, but 10 to 20 years later, there will enough fuel for the next fire.

"Financially it made the most sense for us to rebuild," Azer explained, because the insurance company would give him more money if he rebuilt than if he walked away and built a new house somewhere else.

Azer's experience — rebuilding in the same place, to the same building codes, is quite common — a study published earlier this year in the *Proceedings of the National Academy of Sciences*found rates of home construction are higher in the footprint of wildfires than in surrounding areas.

"We are not changing our building patterns to become more fire resilient if we just put houses in the exact same places," said Volker Radeloff, an ecologist at the University of Wisconsin-Madison, the lead author of the study.

"They may not burn a year or two later, but 10 to 20 years later, there will enough fuel for the next fire."

But city and state officials are reluctant to do anything that would increase the cost of new housing. Yolanda Bundy, the chief building official with the city of Ventura, said she's just not focused on changing local building codes or overhauling land use planning at the moment.

"Right now, all the efforts are concentrated on helping people rebuild their homes, not to create more rules or regulations or more processes," she told KPCC earlier this year.

The burned homes in "very high fire hazards severity zones" will be rebuilt according to the newest codes, and Bundy still considers that a big improvement since nearly all 777 of them were constructed before 2008.

Statewide, new building codes are adopted every three years. That means lessons learned from the Thomas Fire will not be incorporated until the next round of code changers.

"We're constantly playing catch up," said Muñoz. "We're trying to be proactive to see how we can make homes more survivable by adding additional code requirements."

But he, said, regulators also have to balance safety with cost. "Depending on the pushback we get from industry, we may or may not be successful in getting codes that we believe are going to be effective."

What you can do

So, what should you do if you live in a high fire risk area, or are rebuilding your house in one?

Focus on the area 30 feet around your house, says Tom Welle with the National Fire Protection Association.

The first five feet out from your foundation should be nearly bare, or only covered with non-flammable plants or landscaping. Beyond that, Welle says to "think about where leaves and debris pile up because of wind. That's where embers are going to go."

/ Courtesy IBHS / Courtesy IBHS

Courtesy IBHS

Also, when a Red Flag warning is called, bring patio and deck furniture inside, and move things like propane tanks away from the house.

Keeping your house from igniting is really important, because according to Ventura Fire Marshal Morelli, nearly 90 percent of houses that ignite, even brand new houses, eventually burn down.

This story is part of Elemental: Covering Sustainability, a multimedia collaboration between Cronkite News, Arizona PBS, KJZZ, KPCC, Rocky Mountain PBS and PBS SoCal.

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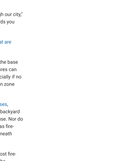

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NEWS

Why Do We Keep Building Houses In Places That Burn Down?

By Emily Guerin
Published Sep 24, 2018 12:35 PM

Firefighters spray water on a burning home on Nov. 15, 2008 in Yorba Linda, California, during the Freeway Complex Fire. (Photo by Sandy Huffaker/Getty Images)

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It's a real estate paradox: the most desirable places to live are also among the most susceptible to wildfires.

Mansions in the Santa Monica Mountains, tiny cabins tucked into the Angeles National Forest, and houses at the very edge of subdivisions are all beautiful because they're surrounded by undeveloped land. But what makes them beautiful is also what makes them dangerous. That nearby wild land is highly flammable.

Every year in California, there seems to be a bigger, crazier, more destructive wildfire. But every year, new houses go up in their path. And it's not just *some* houses, but *thousands* of houses -- over 85,000 new houses in high fire risk areas in L.A. County alone, between 1990 and 2010.

Shouldn't we know better by now? Why do we keep building houses in places that are likely to burn? I've reported countless wildfires over the years and this question continues to bother me.

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I finally decided to answer it.

THE QUEST BEGINS

To do it, I decided to follow a new housing development that's being proposed for an undeveloped patch of land in Orange County. It's called Esperanza Hills, and it's a pretty fancy development: 340 multimillion-dollar homes on a gated, dead-end street above Yorba Linda.

[UPDATE SEPT. 25: *Orange County Supervisors voted 4-1 to approve the Esperanza Hills development.*]

An artist's rendering of the entrance to Esperanza Hills, a development proposed for a high fire risk area just outside Yorba Linda, California. (Courtesy Yorba Linda Estates LLC via OC Board of Supervisors)

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It definitely fits the definition of high-risk -- 10 years ago, a massive wildfire completely scorched the land it would be built on. And Cal Fire calls the entire site a "very high fire hazard severity zone," a wonky term for an area that's likely to burn again in the next 30 to 50 years.

That matters because fire ecologists say where (not how) you build your house is the single most important factor in determining whether it will burn.

"There are many cases where you can do everything right, but if you're in a very risky location your house can burn down," said fire ecologist Alexandra Syphard, who has been studying wildfires for 20 years.

Building with modern, fire-resistant materials, clearing 100 feet or more of brush from around your house -- those things can help, but if you put your house in a fire-prone place, Syphard says, they're just Band-Aids.

"THE MOST DANGEROUS SITE YOU COULD PICK"

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On Nov. 15, 2008, a small brush fire started near the 91 Freeway, a Santa Ana wind corridor. The fire raced west, scorching the entire Esperanza Hills site before moving down into neighborhoods and burning 381 homes, one of the most destructive fires in OC's history.

The evacuation was chaotic, recalls Ed Schumann, whose home burned down. Streets were gridlocked. Kids were running down the sidewalks with their pets. At one point, a teenage boy got out of his car to direct traffic, because no one else was doing it.

To Schumann and other Yorba Linda residents, the idea of adding 340 houses worth of people and cars to that mess is frightening.

"Evacuating that many more people with the same infrastructure, it's a scary thought," Schumann said.

It's why Kevin Johnson, a lawyer for one of the environmental groups that sued over the project, delaying the project for years, calls Esperanza Hills, "probably the most dangerous site in Southern California you could pick to put 340 new families into."

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A dog waits in a cage in the back of a pickup truck as its owners evacuate from the advancing flames on Nov. 15, 2008, in Yorba Linda, California. (Photo by David McNew/Getty Images)

MEET THE DEVELOPER

So, why would anyone want to build in such a risky place? I reached out to the developer behind the project, Douglas Wymore.

He has his reasons. First, he believes he can build these houses, on this site, safely.

"I disagree with somebody that just comes in and says, 'Oh, anytime that you put something next to an open space area that's a very high fire (hazard) zone, you can't protect it,'" he said. "I think the bottom line is you can mitigate it, you can protect it."

And Wymore is doing a lot to protect it. All the houses will be "hardened," in other words, built using fire-resistant materials as required by state building code, including sprinklers in the attic. He's building at least 170 feet of defensible space around the homes. There will be two on-site water tanks for firefighting. And two entrances, one for emergencies, one for everyday use (local residents say this is insufficient, and point to the multiple tight turns on the main entrance, but Wymore is doing what is required under the county's fire standards).

Second, by building modern, fire-resistant homes in the path of a wildfire, Wymore believes he is protecting everyone else in the area whose houses may not be up to the latest building codes. The thinking being: his neighborhood will act as a fire buffer for older, more flammable homes.

And third, he says, look, people want to live here.

"The bottom line is, there's a demand for people that want to live in those areas for obvious reasons," Wymore said. "And so if you're going to take on the task of satisfying that demand and building a project, I think you have a responsibility to make sure you do what's necessary to make your development safe."

Percent of houses in high fire risk areas, by county, 1990 - 2010

MONEY MONEY MONEY

So that's why the developer wants to build. But given the obvious risks, why would the Orange County Board of Supervisors approve this project?

Well, to start, it will generate $8.25 million *a year* in property taxes. And ever since voters passed Proposition 13 in California in 1978, which limited how much someone's property tax bill can go up each year, cities and counties haven't seen their tax revenue increase as housing values rise.

"Prop 13 handcuffs local jurisdictions in finding additional revenue," said Howard Penn, executive director of the Planning and Conservation League. "They can raise sales tax or build more homes. There's not a lot of ways to get more revenue."

Oh, and there's a little something else: Since 2011, Wymore has donated nearly $50,000 to the re-election campaigns of various members of the Orange County Board of Supervisors, none of whom agreed to talk to me for this story.

Wymore was frank about why: "If you put political donations in, whether those people agree with you or don't agree with you, they will at least give you an opportunity to sit down with them and listen. Which maybe they would and maybe they wouldn't do otherwise."

Melanie Schlotterbeck, a consultant for the non-profit Hills for Everyone, shows the history of fires in the region. Red dots represent houses that burned in the 2008 Freeway Complex Fire. (Photo by James Bernal for KPCC)

THE DECIDERS

Although none of the OC supervisors wanted to talk, you can get a pretty good sense of why most of them support it from things they said at previous public meetings about the development. One big reason is the classic private property rights argument: Wymore owns the land, and he should be able to develop it as he sees fit.

"I don't have any reason to now deprive someone of the right to use their property," Chairman Andrew Do said at a May 2017 meeting.

Another big reason? The fire department had given Esperanza Hills the green light.

"If the fire department is satisfied, I'm not inclined to argue with them. I'm not a fireman," Supervisor Shawn Nelson said.

BUT WHY WAS THE FIRE DEPARTMENT SATISFIED?

Well, according to deputy fire marshal Timothy Kerbrat of the Orange County Fire Authority, the preliminary plans for Esperanza Hills met all the state and local requirements for building in a high-risk area.

"Do they have access, do they have water, do they have defensible space, do they have hardened structures that they can protect? Are all those things occuring? And in the Esperanza project, that's the things that I'm seeing. That it's occurring," he said.

(Side note: Although the Supervisors approved the project in May 2017, an Orange County environmental group sued, and a judge overturned the approval, which is why it's back in front of the supervisors again this September).

The view of Chino Hills State Park where it borders residential neighborhoods in Yorba Linda, California, photographed on August 17, 2018. (Photo by James Bernal for KPCC)

WHO PAYS? WE PAY.

There's another factor here: the Orange County Fire Authority will get just over $1 million a year in revenue from the Esperanza Hills project.

And, mostly likely, the agency won't actually have to spend much of its own money to protect this neighborhood if a large wildfire breaks out. That's because state and federal agencies largely reimburse local fire departments for the costs of fire fighting.

Back in 2008, for example, the Orange County Fire Authority spent $2.3 million fighting the Freeway Complex Fire, but they got reimbursed for 94 percent of the costs.

"The irony is that we, as taxpayers, are paying for the protection of homes that are built in high-risk areas," said Kimiko Barrett, a researcher at the Montana-based think tank Headwaters Economics.

You read that right: when a big fire breaks out and threatens houses built in risky places, you and me are the ones picking up the bill.

Kerbrat, the deputy fire marshal, vehemently denies that money or firefighting costs play any role in approving developments, by the way.

"I've never heard firefighters, or a fire agency, talk in that manner," he said. "It's not in our thought process. We don't think of this as a business, for profit."

A MORAL HAZARD

Barrett, however, calls this situation a moral hazard.

"The consequences actually aren't borne by the people who are approving these developments," she said.

And it's not just Barrett with this theory: it's something the Office of Inspector General agreed with in a 2006 report.

"If state and local agencies became more financially responsible for (wildland urban interface) protection, it would likely encourage these agencies to more actively implement land use regulations that minimize risk to people and structures from wildfire," they wrote.

But until this case of misaligned incentives changes, Barrett says we're going to keep building in risky areas. Nearly 1 million new houses in California could be built in these areas before 2050.

Number of additional houses built in high fire risk areas, by county, between 1990 and 2010

This story is part of an Elemental series "Fire in the Neighborhood" about fire danger in cities and surrounding areas.

Elemental: Covering Sustainability is a multimedia collaboration between Cronkite News, Arizona PBS, KJZZ, KPCC, Rocky Mountain PBS and PBS SoCal.

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GET SET | As the Fire Approaches

- [ ] Evacuate as soon as you are set!
- [ ] Alert family and neighbors.
- [ ] Dress in appropriate clothing (i.e., clothing made from natural fibers, such as cotton, and work boots). Have goggles and a dry bandana or particle mask handy.
- [ ] Ensure that you have your emergency supply kit on hand that includes all necessary items, such as a battery powered radio, spare batteries, emergency contact numbers, and ample drinking water.
- [ ] Stay tuned to your TV or local radio stations for updates, or check the fire department Web site.
- [ ] Remain close to your house, drink plenty of water and keep an eye on your family and pets until you are ready to leave.

INSIDE CHECKLIST

- [ ] Shut all windows and doors, leaving them unlocked.
- [ ] Remove flammable window shades and curtains and close metal shutters.
- [ ] Remove lightweight curtains.
- [ ] Move flammable furniture to the center of the room, away from windows and doors.
- [ ] Shut off gas at the meter. Turn off pilot lights.
- [ ] Leave your lights on so firefighters can see your house under smoky conditions.
- [ ] Shut off the air conditioning.

OUTSIDE CHECKLIST

- [ ] Gather up flammable items from the exterior of the house and bring them inside (e.g., patio furniture, children's toys, door mats, etc.) or place them in your pool.
- [ ] Turn off propane tanks.
- [ ] Don't leave sprinklers on or water running - they can waste critical water pressure.
- [ ] Leave exterior lights on.
- [ ] Back your car into the driveway. Shut doors and roll up windows.
- [ ] Have a ladder available.
- [ ] Patrol your property and extinguish all small fires until you leave.
- [ ] Seal attic and ground vents with pre-cut plywood or commercial seals if time permits.

IF YOU ARE TRAPPED: SURVIVAL TIPS

- [ ] Shelter away from outside walls.
- [ ] Bring garden hoses inside house so embers don't destroy them.
- [ ] Patrol inside your home for spot fires and extinguish them.
- [ ] Wear long sleeves and long pants made of natural fibers such as cotton.
- [ ] Stay hydrated.
- [ ] Ensure you can exit the home if it catches fire (remember if it's hot inside the house, it is four to five times hotter outside).
- [ ] Fill sinks and tubs for an emergency water supply.
- [ ] Place wet towels under doors to keep smoke and embers out.
- [ ] After the fire has passed, check your roof and extinguish any fires, sparks or embers.
- [ ] Check inside the attic for hidden embers.
- [ ] Patrol your property and extinguish small fires.
- [ ] If there are fires that you can not extinguish with a small amount of water or in a short period of time, call 9-1-1.

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The Effectiveness of Reverse Telephon Emergency Warning Systems in the October 2007 San Diego Wildfires

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Environmental Sciences Division

Results of An Investigation of the Effectiveness of Using Reverse Telephone Emergency Warning Systems in the October 2007 San Diego Wildfires

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ABSTRACT

Late in October, 2007, fast-moving wildfires fueled by extreme Santa Ana winds threatened residents and their properties in San Diego County, California. The impacted area also included the City of San Diego within the County's boundaries. It turns out the San Diego firestorms would be the biggest in the County's history, surpassing the devastating 2003 firestorms in intensity, duration, and impacted populations. Both San Diego County and the City of San Diego have installed telephone reverse call-down emergency warning systems. A telephone survey of 1200 households located in areas identified by emergency officials as the evacuation zones for the 2007 was conducted in late March and early April 2008 using a random telephone dialing process to determine if people responded to the reverse 911 calls. Findings indicate that those that received a reverse emergency warning call were much more likely to evacuate than those who did not receive a call.

1. INTRODUCTION

Almost every day people evacuate from their homes, businesses or other sites, even ships, in response to actual or predicted threats or hazards. Evacuation is the primary protective action utilized in large-scale emergencies such as hurricanes, floods, tsunamis, volcanic eruptions, releases of hazardous or nuclear materials, fires, and explosions. Although often precautionary, protecting human lives by temporally relocating populations before or during times of threat remains a major emergency management strategy. One of the most formidable challenges facing emergency officials is evacuating residents for a fast-moving and largely unpredictable event such as a wildfire. How to issue effective warnings to those at risk in time for residents to take appropriate action is an on-going problem. To do so, some communities have instituted advanced communications systems that include reverse telephone call-down systems or other alerting systems to notify at-risk residents of imminent threats. This study sought to examine the effectiveness of using reverse telephone call-down systems for warning southern California residents of wildfires in the October of 2007.

Background

Late in October, 2007, fast-moving wildfires fueled by extreme Santa Ana winds threatened residents and their properties in San Diego County, California. The impacted area also included the City of San Diego within the County's boundaries. It turns out the San Diego firestorms would be the biggest in the County's history, surpassing the devastating 2003 firestorms in intensity, duration, and impacted populations. The exceptional response by San Diego County emergency officials in managing the fires - at the height of the event seven separate fires were burning simultaneously in San Diego County – has been largely credited to the lessons learned from the 2003 fires, procurement of new equipment, and on-going coordinated training and exercises. It should be noted that the City and County have separate, but coordinated emergency management and response responsibilities and have worked to obtain as much interoperable communications as possible since the 2003 wildfires.

Both San Diego County and the City of San Diego have installed telephone reverse call-down emergency warning systems. The County installed one after the 2003 Cedar fires and the City of San Diego a similar one in the summer of 2007. Both systems are sold under the "Reverse 911" trademark, although other commercial systems are also marketed. During the wildfires emergency officials decided to use the systems to initiate "be prepared to evacuate" advisories as well as issue mandatory evacuation orders to people in the affected areas. Although telephone emergency call warning systems typically rely on land-line telephones, residents who preferred cell-phones for emergency notification messages had been urged to register their cell-phone numbers with emergency call system operators. However, at the time of the firestorms only 10,000 of the 450,000 households in the City of San Diego had registered their cell-phones for emergency advisories. Recent research indicates less than ten percent of California

households have cell-only telephone systems, with the vast majority having land-lines (Blumberg, 2009).

Using the survey services provided by the Mississippi State University's Social Science Research Center, researchers from the Oak Ridge National Laboratory (ORNL) were able to obtain data about resident's behavior by using a vetted questionnaire to investigate how effectively the telephone emergency warning system operated in the fast-moving hazardous event through random telephone interviews with 1200 households in the evacuation areas. The subsequent analysis was performed on responder's answers at ORNL using the SSPS software package.

Spurred by rampart population growth in the last few decades, Californians have moved into the foothills and canyons of what is now called by researchers as the urban/wildland interface where hazardous events such as wildfires are more likely to happen. Thus many California residents are familiar with wildfires driven by the capricious Santa Ana winds blowing across the mountains from the dry, hot prairies of the central western United States. Because of the concern for wildfire destruction of homes and property, the State of California developed a comprehensive public awareness campaign to encourage property owners to protect themselves from wildfire damages based on the control of fuel sources, retrofitting of structures, and public information programs. Still, the potential for a severe wildfire hazard continues to threaten the residents of the canyons and hills that proliferate across the state. The Federal Government has been proactive in trying to reduce the potential for wildfires (US Department of Interior, 1995) albeit developing a warning strategy has not been a part of that planning. The 2007 wildfires in San Diego County (that includes the City of San Diego) were no exception to the fact that, no matter what preventable actions are taken, wildfires continue to be a menace to California residents living in harm's way.

The San Diego wildfires that we investigated for warning response started at 9:30 Pacific Standard Time on October 21, 2007, near the U.S./Mexican border. The fires, finally contained on November 9, 2007, burned a total of 368,340 acres, destroyed 1,600 structures, and resulted in 10 civilian deaths and numerous firefighter injuries.

All warnings issued by either the city or county were to evacuate or prepare to evacuate. To our knowledge no warnings to shelter-in-place were issued. The warnings were short and direct, lasting from 15 to 22 seconds. Later the County would use the same system to convey health protection messages – such as when it was safe to use the potable water system again.

The Harris Fire was the first fire to erupt (cause unknown) at 9:23 am October 21 with Santa Ana winds of 30-40 mph driving the fire westward. It resulted in thousands of advisory and mandatory evacuations throughout southern San Diego County that were issued through a variety of channels. At 10:30 am the first reverse telephone emergency calls were made to 70 residences facing an immediate threat. At 12:41 am the reverse telephone emergency call mandatory evacuation messages were issued to 700 residences in Tecate, CA, an unincorporated community bordering Mexico. At 1:38 pm the sheriff

ordered further mandatory evacuations using the telephone emergency call system to alert 322 residents of the Dulzura area.

The Witch Creek Fire ignited a few hours after the Harris Fire in Witch Creek Canyon near Santa Ysabel. With Santa Anna winds gusting over 100 mph in some areas, the fire jumped Interstate15 and continued west, causing significant damage and burning a total of 197,990 acres. It was the largest of the 2007 wildfires.

The Rice Canyon fire that started on October 22 eventually burned 9, 472 acres, resulting in a temporary closure on Interstate 15 and causing thousands of residents to evacuate in the northern part of San Diego County. That same day the Rice Canyon fire ignited, a structure fire on the La Jolla Indian reservation started the Poomacha Fire that quickly spread to Palomer Mountain where it joined the Witch Creek Fire and entered the Aqua Tibia Wilderness Area. The Poomacha Fire eventually burned 49, 410 acres and was the last fire to be contained on November 9, 2007. Other fires that needed containment included the Marine Corps Camp Pendelton Fires as well as the Coronado Hills Fire, the El Capitan Fire, and the McCoy Fire. Figure 1. depicts the general evacuation areas in the city and county as well as the boundaries of the fires.

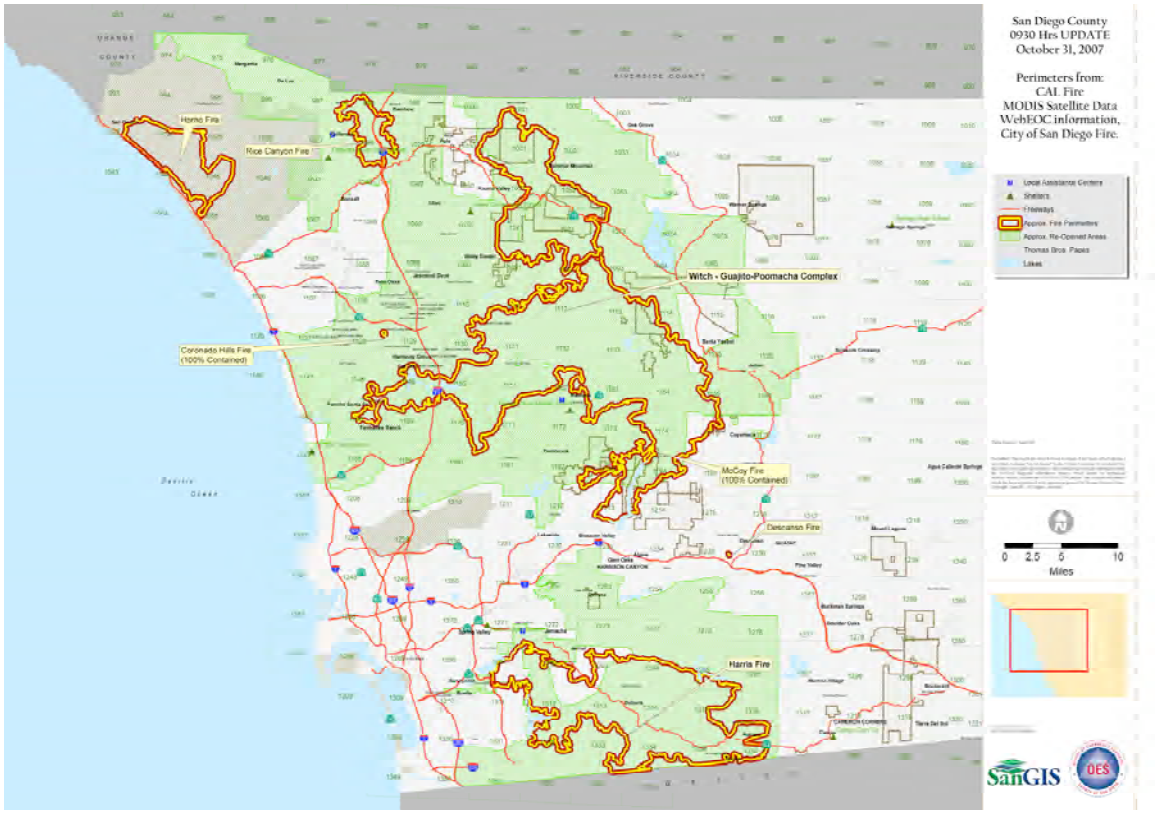

Figure 1. Geographical Areas Impacted (Source: San Diego County OES)

Appendix A lists the telephone emergency calls made to evacuate according to the fire, time of day, location targeted, and number of calls attempted. The call-down was not a saturation effort to blanket the entire area at potential risk. Instead, areas were selected because they were directly in harms way. The reverse telephone emergency call system was extensively used in the County, but was of limited use in the City of San Diego. In the county 233,590 calls were made and in the city 14,738 calls were made (San Diego County and San Diego City, 2008). Since it was estimated that over 500,000 people evacuated, many likely did so without receiving a reverse telephone emergency call.

Other estimates of the use of the reverse telephone systems vary. Seanlon (2008) reported that the city made over 100,000 evacuation calls and the county made a total of 415,000 calls, many in support of reentering evacuated areas or for public health advisories. The San Diego City Attorney's Report (Aguirre, 2007) stated that the city made limited reverse 911 calls in support of evacuation warnings.

Total projected damage costs for the 2007 San Diego County wildfires were estimated in excess of $1.5 billion. During the course of the 2007 fires, officials estimated that 515,000 county residents were in areas that received voluntary or mandatory evacuation notices. During the height of the event many schools were closed and major freeways shut down for extended periods. County residents were also urged to remain off the roads to facilitate fire-fighting efforts in gaining access to the affected areas.

Data Collection

A telephone survey of 1200 households located in areas identified by emergency officials as the evacuation zones for the 2007 wildfires (see Figure 1) was conducted in late March and early April 2008 using a random telephone dialing process. The surveys were conducted by the Survey Research Center at Mississippi State University. Table 2. summarizes the status of telephone calls made during the survey.

Table 2. Survey status of telephone interview calls.

1,210	Completed interviews
768	Respondent refused to participate
27	Incomplete interviews (respondent prematurely ended interview)
233	Household not in area affected by 2007 wildfires
4,981	Bad telephone numbers (fax machine, office telephone)
315	Communication problem (non-English speaker, health problems, deaf)
3,536	No one available (answering machine, no answer, busy signal)
1,134	Incomplete callback (callback scheduled, but quota was met before callback)
12,204	Total telephone numbers dialed

2. WARNING RESPONSE RESEARCH

Previous studies of fast-moving hazardous events have found that citizens rely on certain information sources more than others, view some as useful but dismiss others, and respond more rapidly in response to different warning mechanisms. However, analysis about the effectiveness on the use of reverse telephone calls to notify of evacuation orders has not been well documented.

The empirical study of public evacuation and response to emergency warnings has been on-going for almost 50 years (Perry and Mushkatel, 1986; 1984; Leik et al., 1981; Quarantelli, 1980; Baker, 1979; Mileti and Beck, 1975; Drabek and Stephenson, 1971; Lachman et al., 1961). These studies, when viewed collectively, have compiled an impressive record about how and why public behavior occurs in the presence of impending disaster or threat. For example, it is well documented that emergency warnings are most effective at eliciting public protective actions like evacuation when those warnings are frequently repeated (Mileti and Beck, 1975), confirmatory in character (Drabek and Stephenson, 1971), make specific recommendations and are perceived by the public as credible (Perry et al., 1981). Informal warning mechanisms (friends or relatives) are also at times very effective. In many evacuations people leave the area at risk before an official warning is announced. Evacuation behavior is also influenced by other factors such as personal or family resources, age, social relationships including social networks, level of education completed, experience with previous emergencies, social and environmental cues of immediate hazard, physical or psychological constraints to evacuating, as well as other more specific circumstances (such as time of day, weather conditions, etc.). Appendix B provides a list of those factors and how they have co-varied with decisions to evacuate.

Studies that have used surveys of random samples of people living in or near evacuation areas have been conducted for a variety of hazard events. For hurricanes these include: Elena and Kate (Baker, 1987; Nelson et al, 1988), Eloise (Windham et al., 1977, Baker, 1979), Camille (Wilkenson and Ross, 1970), David and Frederick (Leik et al., 1981), Carla (Moore et al., 1964), Floyd (Dow and Cutter, 2002; HMG, no date), Andrew (Gladwin and Peacock, 1997), Bertha and Fran (Dow and Cutter, 1998), Georges (Dash and Morrow, 2001; Howell et al., 1998), Brett (Prater et al., 2000), Bonnie (Whitehead et al., 2000) Ivan (Howell and Bonner, 2005), and Lily (Lindell et al., 2005).

Studies of flood evacuations include Denver, CO, (Drabek and Stephenson, 1971), Rapid City, SD, (Mileti and Beck, 1975), Big Thompson, CO, (Gruntfest, 1977), Sumner, Valley, Fillmore, and Snoqualmie, WA, (Perry et al., 1981), Abilene, TX, (Perry and Mushkatel, 1984), Clarksburg and Rochester, NY, (Leik et al., 1981), and Denver, CO, and Austin, TX, (Hayden et al., 2007).

Studies of evacuations due to chemical accidents include Mississauga, Ontario, Canada (Burton, 1981), Mt. Vernon, WA, and Denver, CO, (Perry and Mushkatel, 1986),

Confluence and Pittsburg, PA, (Rogers and Sorensen, 1989), Nanticote, PA, (Duclos et al., 1989) and West Helena, AR, (Vogt and Sorensen, 1999).

Other protective action studies include the Hilo, HI, tsunami (Lachman et al., 1961), the Mt. St. Helens, WA, volcanic eruption (Perry and Greene, 1983; Dillman et al., 1984), the Three Mile Island nuclear accident, PA, (Cutter and Barnes 1985; Flynn, 1979), the World Trade Center bombing, NY, in 1993 (Aguire et al., 1998), and the World Trade Center collapse, NY, in 2001 (Averill et al., 2005).

Excellent summaries of this research currently exist (Lindell and Perry, 2004, Drabek, 1986; Mileti and Sorensen, 1990, Tierney et al., 2003; National Research Council, 2006) and will not be repeated here.

Wildfire Evacuation Research

No scientific based survey has been conducted on wildfire evacuation behavior although several excellent case studies exist. Cohn et al. (2005) examined issues from both citizen and management perspectives at three Colorado wildfires – Hayman, Rodeo-Chedeski, and Buckcout/Cave Snout. Their findings are consistent with research on other evacuations. Their findings indicate:

- evacuation can be a disruptive and frustrating experience;
- this is exacerbated by poor information and communications; and
- geocoded specific area information is needed.

Taylor et al. (2007) surveyed focus groups following the Bridge Fire and Old/Grand Prix fires near San Bernadino, CA. Eight focus groups set up community organizations were conducted to discuss resident's experience in the fires. Their findings indicate:

- people sought real-time information but rarely had access to it;
- media and official information sources rarely provided the information that residents wanted; and
- people actively searched for additional information through alternative sources.

Benight et al. (2004) conducted a case study of the Hayman and Missionary Ridge, CO, wildfire evacuees using a non-random survey technique. Their findings include:

- people used a wide variety of information sources to seek information on the fires;
- males and people with long residency times in the affected areas were less likely to evacuate; and
- people wanted more, accurate, more frequent, and more detailed mapping.

All three studies add insight into our survey results.

Thus most of the social science research conducted in the US related to wildfires has focused on community level preparedness and organizational response to wildfires, individual perceptions of fire hazards and risks, household adoption of firesafe practices, and modeling the socioeconomic risks from wildfires (Daniel et al., 2007; Martin et al., 2008).

Summary of Research Findings on Risk Communication

Empirical studies and summaries have done much to further social scientific understanding of how people process and respond to risk communications in emergencies; it has also served to inform practical emergency preparedness efforts in this nation and abroad. A summary of relevant research on human response to warnings and evacuation derived from the empirical research record can be summarized as follows.

Research indicates that people's decisions to evacuate are influenced by:
• The frequency and channel of communication of the warning. The most important dimensions of the warning frequency/channel are the number of different channels people hear the warning from, hearing from personal channels, and the frequency that people hear the warning.
• The content of the warning message. The most important dimensions of content are a description of the hazard and impacts, the predicted location of impacts, what actions to take, and when to take those actions.
• Observing cues. These include social cues (i.e., seeing neighbors evacuating) and physical cues (i.e., seeing flames or a smoke cloud).
• Aspects of individual status. These include socio-economic status (i.e., income level and education completed), age, gender, and ethnicity.
• The role(s) an individual holds in society. These include having children at home, family size (i.e., larger versus smaller), extent of kin relations, being a united family at time of the event, and greater community involvement.
• Previous experience with the hazard. People are inclined to do what they did in a previous situation.
• People's belief in the warning. Belief is not determined by the credibility of the source issuing the warning but by the frequency the message is heard.
• People's knowledge about the hazard. This includes previous information and data gained in the event or by cues.
• People's perceptions of risk. This includes perception of the threat before the event and perception of risk from the specific event.
• The extent of social interactions during the event. This includes efforts to contact others about the event, being contacted by others, and being able to confirm the message as accurate and credible.

3. DESCRIPTIVE FINDINGS

Warnings

All warning mechanisms available to the city and county were utilized in the wildfire outbreaks. This included the reverse 911 telephone emergency call system, a call-in 211 communication system, police and fire personnel going door-to-door or with loudspeakers, and on-going coverage by local media outlets. One local newspaper initiated an on-going blog on their web-site that was constantly updated to inform residents of on-going closures and emergency conditions provided by fire officials. As in any disaster an informal warning system also emerged with friends, neighbors and relatives passing on warning messages.

Our research focused on when and how people received their first warning, the penetration of warnings from different sources during the event, the total number of warnings received, and the evaluation of the effectiveness of warning sources as determined by their eventual action to evacuate the area as warned.

In our sample about 63% of the households that responded to the survey received an evacuation warning while about 37% of those that responded did not. The distribution of warning times is found in Table 3. and Figure 2.

Table 3. Date of Warning Receipt during October, 2007.

Date	Frequency	Percent
Oct. 20 – Sat.	169	14.0
Oct. 21 – Sun.	192	15.9
Oct. 22 – Mon.	282	23.3
Oct. 23 – Tues.	63	5.2
Oct. 24 – Wed.	20	1.7
After October 24	45	2.9
Subtotal	761	100
Did not receive a warning	449	37.1
Total	1210	100.0

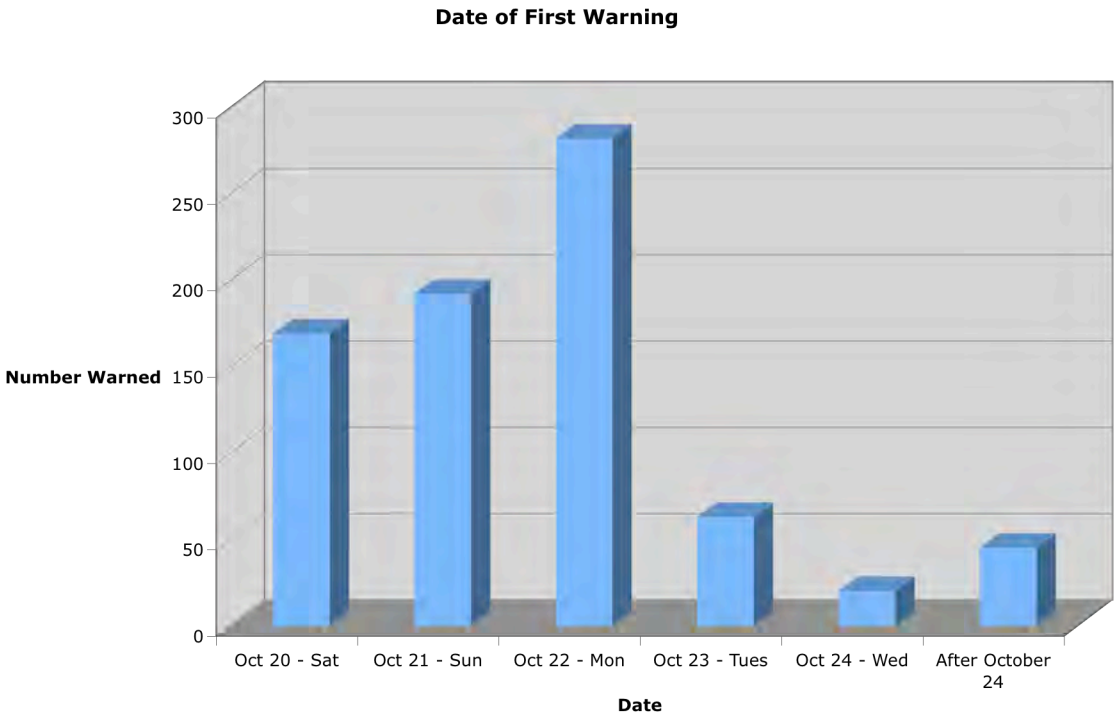

Figure 2. Date of First Warning

Over eighty percent (84.5%) of warnings were received in the first three days of the wild fires. The reverse telephone emergency calls were issued from Saturday, October 20, through Tuesday, October 23, although at a much lower volume on the 23rd. After Wednesday, October 24, few residents reported receiving a warning message. Table 4 shows how households in survey received the first warning message.

Table 4. Source of First Warning.

Source	Frequency	Percent
Reverse telephone emergency calls	510	42.1
Authority going door to door	45	3.7
Street loudspeaker	5	0.4
Tone-alert radio	4	0.3
Television	93	7.7
Radio	5	0.4
Internet	3	0.2
Telephone call	29	2.4
Face to face (informal)	46	3.8
Other	18	1.5
Subtotal	761	62.7
Did not receive a warning	452	37.3
Total	1210	100

By far the dominant initial warning came from the reverse telephone emergency call system, reaching 42.1% of the households in the survey population. The next most frequent initial warning source was television accounting for 7.7% of reported first warning sources. Informal and other official warning sources played minor roles in the initial warning receipt process. Other sources, including those from the Internet, played insignificant roles. Figure 3 shows the time of the day people received the first warning.

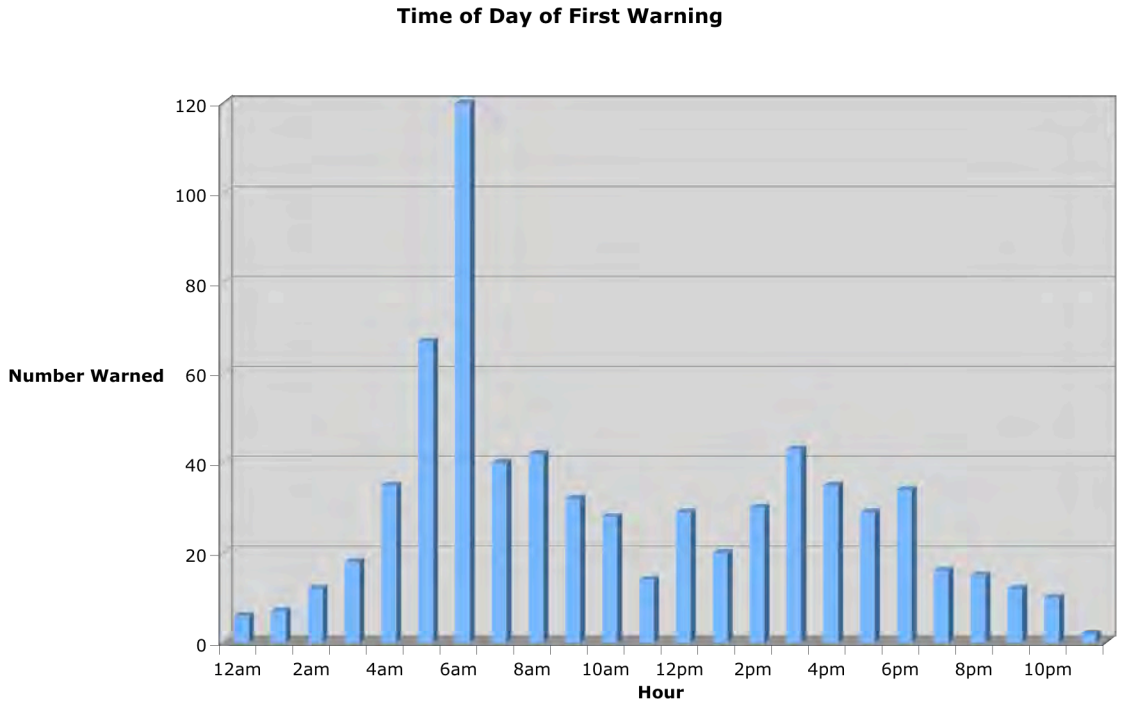

Figure 3. Time of day warning received (all days aggregated)

Most people in our sample population received warnings early in the day (from 4 to 9am) or late in the afternoon (3 to 6 pm) of October 21. Very few reported receiving a warning late at night or in the very early morning. This pattern of warning receipt is highly typical of warnings that develop over several days or longer about an on-going or changing threat.

After receiving the initial warning, households reported receiving warnings from a variety of other sources. About 6.6% received reverse telephone calls after their initial warning from another source. Television was the most frequently mentioned source (33.1%) of follow-up information. The Internet played a very minor role with only 4.9% of respondents receiving information from the web after the initial message.

Social communication among friends, family and colleagues also played a major role following the initial communication. About 45% reported contacting someone else about the evacuation warning. About one fifth (20.3%) of respondents contacted a relative about the evacuation warning, 19.3% reported contacting friends, and 29.8 % reported contacting a neighbor about the warning.

Evacuation

Evacuation occurred in selected areas throughout the officially designated evacuation zone as shown in Figure 1. Of the population sampled 59.1% evacuated, leaving 40.9% that did not. Most people evacuated over the first 4 days of the emergency. Figure 4. shows the frequency distribution of the day people departed.

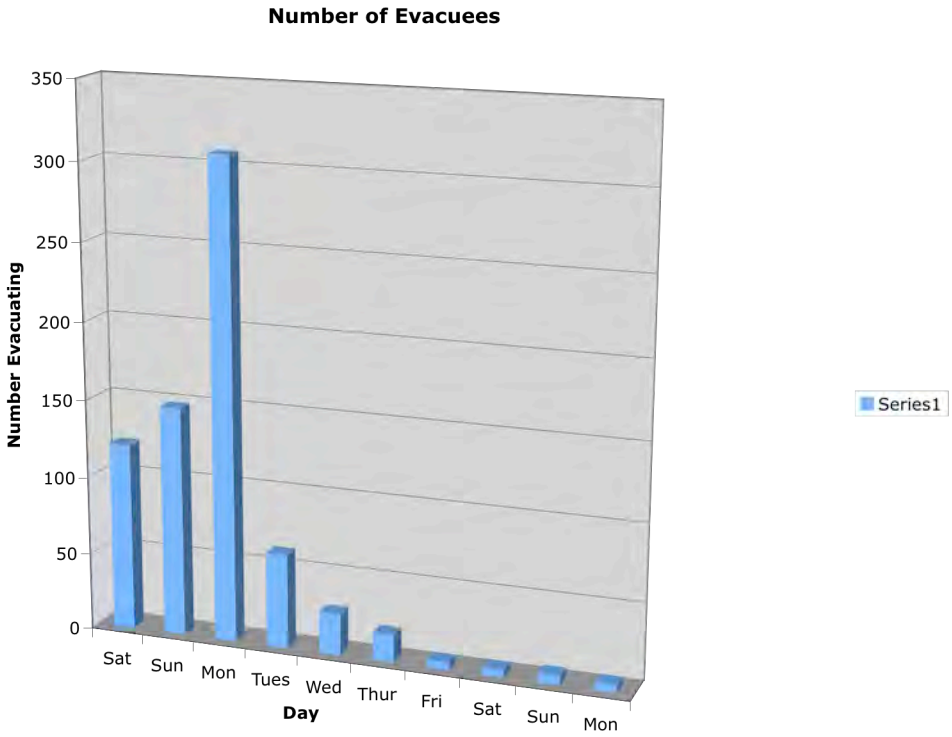

Figure 4. Day of Evacuation Correlated with Number of Evacuees.

As expected, most households evacuated on the first 3 days of the event with the largest numbers occurring on Monday, October 22 (the second day of the more severe wildfires). Table 5. presents the reasons people reported for not evacuating.

Table 5. Reported Reasons For Not Evacuating

Reason	Frequency	Percent of Sample	Percent of Non-Evacuees
Not in area told to evacuate	180	14.9	36.4
Stayed to protect property	41	3.4	8.2
Residence not threatened	274	22.6	55.4
Too expensive	5	0.4	1.0
Protect animals	18	1.5	3.6
Couldn't leave family member	8	0.7	1.6
Did not have transportation	2	0.2	0.4
Because of work	1	0.1	0.2
Other	61	0.5	12.3

Over half (55.4%) of the non-evacuees reported not feeling their property were threatened by the wildfires as the major reason for not evacuating. In addition 36.4% said they were not in an area told to evacuate. Often it is asserted that people do not evacuate to protect their property or care for animals. In this study these constraints were fairly minor reasons for not leaving. Social or economic constraints played insignificant roles in the decision to not evacuate. This may be because of the high personal incomes as reported in the Census, 2000, data.

When the wildfires broke out, most households with one or more family members were at home (96.7%). For most households (92.3%) all family members were at home before the household evacuated. Very few households needed family members to return home prior to evacuating (2.2%).

About 54% of the household had animals at home at the time of the evacuation. Table 6. shows the distribution of households with the number of animals reported at home at the time of the evacuation warnings.

Table 6. Number of Animals per Household

Number	Frequency	Percent
0	557	47.6
1	248	21.2
2	154	13.2
3	70	6.0
4	45	3.8
5	27	2.3
6	22	1.9
7 or more	27	2.3
Not/sure/refused	20	1.7
Total	1170	100

Of the households with animals that evacuated, 90.5% took their pet(s) or animal(s) with them. Less than five percent (4.2%) left them indoors while only 1.9% left them outdoors. Only 0.8% took them to an animal shelter.

As in most evacuations the majority of evacuees reported the final destination site was to a relative's or friend's residence. Some went to a hotel and motel. The other category (about 7.6 %) includes other types of destinations such as a campground or vacation home. Only 4.9% went to a public shelter. This is consistent with other research findings that indicate use of public shelters by people with higher income is usually low. Destinations of the evacuees are described in Table 7.

Table 7. Destinations of Evacuees

Destination	Frequency	Percent
Relative's home	312	43.6
Friend's home	197	27.6
Public shelter	35	4.9
Hotel or motel	79	11.0
Other	92	7.6
Total	715	100

The evacuation trip was characterized as difficult for many households. In this study 227 of the evacuating households (45.9%) reported experiencing some type of problem during the exit journey. The largest problem encountered was traffic congestion (40.6%) followed by difficulties from smoke impairment of vision (8.6%) and road closures (6.6%). Table 8. summarizes problems evacuees encounter during their egress trip.

Table 8. Problems Reported During Evacuation Trip

Problem	Frequency	Percent of evacuees
Debris on roads	16	3.2
Road closures	33	6.6
Health effects	3	0.6
Smoke interfering with vision	43	8.6
Traffic congestion	201	40.6
Vehicle problems	4	0.8
Other	10	2.0

Risk Perception

Since perceived risk of a hazard generally plays a significant role in many evacuation decisions, several dimensions of risk perceptions were measured. When asked if wildfires had ever been a problem in the respondent's immediate community, 63% of respondents indicated wildfires had been a problem, while 36% did not think they had been a problem. Respondents were also asked about the threat of wildfire in the immediate vicinity of their residence. Table 9. presents the frequency of perceived threats from wildfires among respondents.

Table 9. Perceptions of Threats from Wildfire

Threat Level	Frequency	Percent
Not a threat at all	129	10.7
A slight threat	428	35.4
A moderate threat	405	33.5
A very severe threat	228	18.9
Don't know	20	1.7
Total	1210	100

The sample was fairly evenly divided between households reporting seeing their immediate environment as at no or slight threat of wildfire versus those perceiving a moderate or severe threat of wildfires and those who perceived their immediate environment as having no threat from wildfires.

Respondents were also asked if at the time of the receipt of first evacuation warning they could see or smell any evidence of the wildfires near their residence. Of those who reported receiving a warning more than three/fourths (81.9%) indicated they had experienced visual or olfactory cues of the fires, while less than a fifth (17.7%) reportedly no evidence of a wildfire threat. This is consistent with other research findings that indicate receiving a visual, audio, or olfactory cue is often a major incentive for people to evacuate.

Demographics

Table 10. summarizes the demographics of sampled population and that of San Diego County as a whole.

Table 10. Demographic and Income Characteristics of Respondents in Sample Compared to Census 2000 Data Sources.

Item	Sampled Population	San Diego County *
White	83.6%	66.5%
Hispanic/Latino	5.6%	26.7%**
Black	1.7%	5.7%
Asian	3.8%	8.9%
American Indian	0.5%	0.9%
Pacific Islander	0.2%	0.5%
Median Income	$125,000-150,000	$47,067
Owner Occupied Housing	82.4%	55.4%
Median House Value	$700,000	$227,200
Median Age	52	33

* Source: US Census, 2000

** Can be of any race, i.e. White Hispanic (self-report)

Table 10 illustrates that the evacuation area mainly consisted of residents who were predominantly White and more affluent with higher median incomes and housing values than those of San Diego County as a whole. The sampled population also was older (median age of 52) than the county's population median age of 33. It is difficult to assess the difference between the sample and county with respect to Hispanics because of the ambiguities of self-reporting associated with defining a Hispanic heritage. From the reported ethnicity of respondents, however, it appears the sampled population likely had a much lower percentage of Hispanics than the County of San Diego as a whole.

4. EVACUATION ANALYSIS

The following variables used in our analysis of warning response correspond to the findings presented in the previous section. In this analysis the dependent variable is that coded as "Response: evacuated (yes or no)".

The independent variables include:
• Channel of communication, i.e., reported receiving warning from reverse 911 telephone calling system, from media (TV) warning, or informal warning (yes or no);
• Warning content: factor not included in analysis due to interval between warning and timing of survey;
• Observation of physical or olfactory cues, i.e., saw smoke or flames (yes or no);
• Status, i.e., income (dollars), house value (dollars), education (5 point scale);
• Role in society, i.e., age (years), rural (versus urban);
• Previous experience, i.e., had evacuated from a wildfire in the past (yes or no);
• Belief (frequency). i.e., as measured by number of warnings received from official sources (total number of warnings);
• Knowledge of preparedness actions, i.e., had prepared supply kit (yes or no), adopted mitigation measures (yes or no), believed they lived in a community where wildfires were a problem (yes or no);
• Perceptions of risk, i.e., felt residence was threatened by wildfire events (5 point scale); and,
• Social interactions, i.e., as measured by contact by friends/relatives (yes or no).

Correlation Analysis

Based on correlation analysis presented in Appendix C, the factors significantly associated with evacuation during the San Diego wildfires include the following findings. Respondents who were more likely to evacuate had:

(1) Received a warning from a reverse emergency telephone calling system. People who received an emergency telephone calling system call were more likely to evacuate than those who did not receive a call. This can be explained by two factors. First, the calls were targeted to residents in areas at high risk of imminent wildfires. Second, people are more likely to respond to personal warnings provided by the call from an official source, in this case, the county's or city's emergency services office.

(2) Received warning from media sources. People who received a warning from television media were more likely to evacuate than those who did not. People likely confirmed the initial warnings by turning to the media. When media reinforced the need to evacuate, people were more likely to comply. It is likely the media was able to show graphics and photos of the wildfires that likely enhanced the viewer's perception of threats from the wildfires.

(3) Received an informal warning. Those receiving an informal warning were more likely to evacuate than those who did not. Consistent with the research literature, informal warnings play an important role in the response process.

(4) Received a number of warnings from official sources. The more warnings people received from official sources the more likely they were to evacuate. The frequency of warnings is strongly associated with decisions to evacuate.

(5) Were contacted by someone informally. People who were contacted by friends and/or relatives were more likely to evacuate than those who were not. Informal contacts likely served to confirm the need to evacuate or made the destination site easier to choose. In this survey, 71.2% of reported evacuation destinations were to a friend's or relative's residence.

(6) Saw smoke or flames. People who reported witnessing flames or smoke in the immediate environment of their residence were more likely to evacuate than those who did not. The presence of environmental cues likely reinforced peoples perception of being in danger and that they should engage in the protective response of leaving the area.

(7) Perceived they lived in a community where wildfires were a problem. In this study respondents who perceived they lived in area where wildfires were a problem were more likely to evacuate than those who did not. This may be a function of either pre-event knowledge about wildfire hazards or pre-event perceptions that they lived in an area of potential harm.

(8) Felt threatened by wildfires in the vicinity. People who believed their residence was more threatened by wildfires were more likely to evacuate than those who believed they were not threatened. This likely resulted from information in the warnings.

(9) Lived in rural area. People who lived in a rural area were more likely to evacuate than those who lived in an urban or suburban area. This may be attributable to houses in rural areas being at greater risk from wildfires in general because of the fuel potential generally found in rural areas.

(10) Lived in lower-valued house. People living in lower-valued residences were more likely to evacuate than those who did not. One explanation was that people with less to lose were more like to evacuate. There was no correlation between housing value and the perception the respondent lived in an area at risk of wildfires.

(11) Educational level. People who were more educated were more likely to evacuate than those who had lower level of education.

Regression Analysis

In order to control for possible interaction effects not controlled for in the correlation analysis we conducted a series of regression analyses to ascertain the factors significantly

related to evacuation. Appendix D presents a summary of the results. In the first analysis we regressed all independent variables in the correlation matrix with the dependent variable of evacuation. We then eliminated all variables with a significance of greater than 0.05 ($p>0.05$) and conducted a second regression analysis with the variables where $p<0.05$. In the final analysis, 6 variables were significantly ($p<0.05$) related to evacuation behavior. These variables included:

- perception their residence was in an area threatened by wildfires,
- adoption of mitigation measures at the home,
- receipt of a reverse 911 emergency telephone system call,
- receipt of an informal warning,
- residence in a rural versus urban area, and
- seeing environmental cues (smoke or flames) of a dangerous situation.

5. REVERSE TELEPHONE CALL RECEIPT ANALYSIS

The following variables were used in the analysis of warning response in correspondence to the findings presented in the previous section.

Dependent variable used was if the respondent had received a reverse 911 telephone call, a measured by yes or no.

The independent variables included:
- channels of communication, as measured by receipt of media (TV) warning (yes or no) and/or receipt of an informal warning (yes or no);
- socioeconomic status, as measured by income (in dollar amount), house value (in dollar amount), and education level (5 point scale);
- role in society as measured in age (years), urban (versus rural) location (yes or no);
- previous experience with wildfire threat, as measured in having evacuated from a wildfire in the past (yes or no);
- knowledge of protective actions, as measured by having prepared supply kit (yes or no), adopted mitigation measures for residence or property (yes or no), and perception that wildfires were a problem in their community (yes or no); and, lastly,
- perceptions of risk from wildfires, as measured by perception that their residence was threatened by wildfire events (5 point scale).

Correlation Analysis

Based on correlation analysis (see Appendix C) the following relationships were statistically significant ($p<0.05$).

(1) Receipt of media warning. People who received a media warning were more likely to receive a reverse telephone emergency warning call. Since receiving a media warning as a first warning was very low (4%), the findings indicate that people who received a reverse telephone warning call likely turned to a media source for confirmation.

(2) Receipt of an informal warning. People who received a warning from an informal source were more likely to receive a reverse telephone emergency warning call.

(3) Owned a family supply emergency kit. People who had prepared a family emergency supply kit were more likely to receive a reverse telephone emergency warning call.

(4) Adopted mitigation measures. People who had adopted wildfire mitigation measures for their residence and/or property were more likely to receive a reverse telephone warning call.

(5) Experienced a previous evacuation. People who had prior evacuation experience with wildfires were more likely to receive a reverse telephone warning call. This may be a function of living in an area of higher threat from wildfires.

(6) Knowledge that wildfires were a problem in their community. People who perceived that wildfires were a problem in their community were more likely to have received a reverse telephone emergency warning call.

(7) Age. People who were younger were more likely to receive a reverse telephone emergency warning call. Younger people may be more likely to answer the phone or have access to telephone communications. This finding is also interesting in that current national surveys indicate that about a third of people age 18 to 24 and a fourth of people 25 to 29 live in households with only cell phones, which the reverse emergency call system was unable to contact only if the resident had self-subscribed to the service (CDC, 2009).

(8) Educational level. People who had a higher level of education were more likely to receive a reverse telephone warning call.

Regression Analysis

In order to control for possible interaction effects not controlled for in the correlation analysis we conducted a series of regression analyses to ascertain the factors significantly related to receiving a reverse emergency warning call that resulted in evacuation. Appendix D presents a summary of the results. In the first analysis we regressed all independent variables used in the analysis with the dependent variable of receiving a reverse telephone warning call. We then eliminated all variables with a significance of greater than 0.05 ($p>0.05$) and conducted a second regression analysis with the variables where ($p<0.05$). In the final analysis, 7 variables were significantly ($p<0.05$) related to receipt of a reverse telephone warning call. These variables included:

- knowledge that wildfires were a problem in their community,
- prior adoption of wildfire mitigation measures,
- experience with previous wildfires,
- receipt of a warning from media,
- receipt of a warning from an informal source,
- educational level, and
- age.

6. CONCLUSIONS

The major finding from this research concerns the effectiveness of the emergency reverse telephone notification system in prompting residents to take the protective action of evacuating. While we cannot estimate the portion of the people targeted with calls that actually received a warning message, we can say that from the population sampled in this study that the reverse telephone warning system was the dominant form of first warning among our respondents. Furthermore, those that received a reverse emergency warning call were much more likely to evacuate than those who did not receive a call. The emergency telephone notification system was one of two significant warning mechanisms identified in the study, with the other being the informal notification process. We know from previous studies that informal notifications play a significant role in the warning process. This is the first investigation of this emerging warning technology and the findings should be encouraging to communities who have adopted or are considering adopting the reverse telephone warning technology. As with any warning technology, good planning, public education and outreach programs, and community exercises and testing procedures are critical to the effectiveness of any warning system, especially if more cell phone users are to be reached using the reverse telephone warning systems. The downside is that cell phones are being used by the very young, some of elementary school age, who are incapable physically or mentally of instituting protective actions as recommended by authorities. This lends another layer of complexity in determining who the reverse telephone technology should reach in times of emergencies when quick response may be vital to saving lives.

Several findings reinforce previous warning response studies. Three variables - perception of threat, living in higher risk areas, and seeing environmental cues - were significantly related to the decision to evacuate from the wildfire.

The final significant relationship between mitigation adoption and evacuation is also important. Households who had adopted one or more wildfire mitigation measures - such as brush (fuel) clearing, installing roof sprinklers, modifying a structure to be fire resistant such as replacing roofs with fire-resistant tiles, or modifying residential landscaping - were more likely to evacuate. This suggests that taking protective actions to protect assets may help to facilitate evacuation of people and animals and overcome residents' resistance to evacuating in order to remain and protect property. It also indicates monetary resources (higher income) to implement mitigation measures.

The analysis of the receipt of reverse telephone emergency warning calls indicate three trends. First, people who received reverse telephone warning calls also received warnings from media and informal sources. Second, people receiving the reverse telephone calls likely resided in areas at higher risk of wildfires and had adopted mitigation measures, perceived their community had a problem with wildfires, and had experienced previous wildfires. Finally, two demographic variables were significant - people with higher educational levels as well as younger people were more likely to receive the reverse telephone emergency warning calls.

Overall the results of the study are encouraging from both a managerial and response perspective. The targeting of high risk areas with the reverse emergency warning calls was apparently effective in reaching the people who needed to evacuate. Second, people receiving the calls were much more likely to evacuate than those who did not. This is the first systematic study of a new warning technology deployed in recent years. Although telephone databases from system vendors can indicate how many calls were made and answered, that data does not show how effective the warnings were in promoting protective actions, especially in areas subject to risk of wildfires. In this case, the receipt of targeted information from an official source using a reverse telephone warning technology proved to be extremely effective in protecting human life by getting residents to evacuate from wildfire hazards.

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Appendix A: Emergency Telephone Evacuation Calls Made During the 2007 Wildfires

Telephone Evacuation Calls In San Diego County

Date	Fire	Time	Location	Number
10/21	Harris	10:30	unnown	70
“	Harris	12:41	Tecate	700
“	Harris	13:38	Dulzura	322
“	Witch	14:22	Ramona	8900
“	Harris	16:10	Otay Lake/Barrett Junction	700
“	Witch Creek	16:40	Witch Creek	300
“	Witch Creek	22:10	Ramona	10000
10/22	Witch Creek	01:36	Escondido	2000
“	Witch Creek	02:56	San Marcos	4300
“	Harris	03:32	Coyote Holler	970
“	Witch Creek	04:22	Poway	1900
“	Coranado Hills	05:24	Carlsbad	22770
“	Witch Creek	06:00	Del Dios	43240
“	Rice Canyon	06:14	Rainbow	36
“	NA*	06:35	Valley Center	2300
“	Witch Creek	07:36	Poway	4000
“	NA*	10:08	Rancho Santa Fe/Leucadia	17600
“	Witch Creek	10:55	Poway	8700
“	Witch Creek/Rice Canyon	12:24	Poway +	19000
“	Witch Creek	18:25	Del Mar Solano Beach, Rancho Santa Fe	34700
“	Witch Creek	20:09	Olivenhein	1640
10/23	Harris	02:43	Wildcat Canyon/Muth Valley	3800
“	NA*	03:09	North Jamul/Indian Springs	1550
“	Poomacha	04:45	La Jolla Indian Reservation/Pauma Valley	4100
“	Poomacha	06:30	Palomar Mountain	8000
“	Witch Creek	06:45	Hidden Meadows	2900
“	Rice Canyon	10:18	De Luz	1000

“	Harris	12:38	Ramona/Lakeside	1800
“	NA*	13:37	Julian	2400
“	Rice Canyon	14:33	De Luz	4000
“	Harris	14:45	Jamul	800
“	NA*	16:33	Julian	3100
“	Poomacha	17:30	Eagle Peak/ Cuyumaca	142
“	Rice Canyon	20:15	Fallbrook	14000
10/24	Rice Canyon	02:10	De Luz	900
10/25	Harris	13:54	Lawson Valley/Carveacres	950
Total				233,590

Source: Compiled from *2007 San Diego County Firestorms After Action Report*. San Diego County Office of Emergency Services.
*NA – Not Available

Telephone Evacuation Calls In San Diego City

Date	Fire	Time	Location	Number
10/22	Witch Creek	04:00	San Pasqual Valley	14738

Source: *After Action Report – October 2007 Wildfires: City of San Diego Response*. City of San Diego.

Appendix B: Factors Associated with Evacuation Behavior

Characteristics of the Warning

As Factor Increase,	Response:	Level of Support:
Channel: Electronic	Is Mixed	Low
Channel: Media	Is Mixed	Low
Channel: Siren	Decreases	Low
Personal warning vs. impersonal	Increases	High
Proximity to threat	Increases	Low
Message specificity	Increases	High
Number of channels	Increases	Low
Frequency	Increases	High
Message consistency	Increases	High
Message certainty	Increases	High
Source credibility	Increases	High
Fear of looting	Decreases	Moderate
Time to impact	Decreases	Moderate
Source familiarity	Increases	High

Characteristics of People

As Factor Increase,	Response:	Level of Support:
Physical cues	Increases	High
Social cues	Increases	High
Perceived risk	Increases	Moderate
Knowledge of hazard	Increases	High
Experience with hazard	Is Mixed	High
Education	Increases	High
Family planning	Increases	Low
Fatalistic beliefs	Decreases	Low
Resource level	Increases	Moderate
Family united	Increases	High
Family size	Increases	Moderate
Kin relations (number)	Increases	High
Community involvement	Increases	High
Ethnic group member	Decreases	Moderate
Age	Is Mixed	High
Socioeconomic status	Increases	High
Being female vs. male	Increases	Moderate
Having children	Increases	Moderate
Pet ownership	Decreases	Low

Appendix C: Correlation Matrix

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 evac	1.41	1.00	1.000																
2 tele	1.51	.500	.307**	1.000															
3 med	1.71	.501	.146**	.456**	1.000														
4 num	1.86	1.074	-.308**	-.793**	-.322**	1.000													
5 inf	1.85	.335	.176**	.073*	.001	-.507**	1.000												
6 cont	1.45	.502	.286**	.554**	.427**	-.507	.213**	1.000											
7 sup	1.46	.503	.013	.078**	.142**	-.049	.006	.132**	1.000										
8 mit	1.56	.515	-.055	-.114**	-.077**	.105**	.017	-.071*	-.149**	1.000									
9 exp	1.77	.422	.111	.143**	.166**	-.118**	-.016	.201**	.216**	-0.165**	1.000								
10 cues	1.19	.339	.089*	.026	.055	-.014	-.047	.057	.030	-.042	-.006	1.000							
11 prob	2.65	.957	.091**	.093**	.013	-.117**	.018	.069*	.045	-.094**	.087**	.012	1.000						
12 threat	1.52	.500	-.169**	-.053	-.009	.090**	-.048	-.062*	-.057*	.126**	-.093**	-.045	-.347**	1.000					
13 loc	1.78	.412	.180**	.025	.044	-.075**	.001	.009	.055	-.211**	.096**	.015	.205**	-.225**	1.000				
14 age	53.13	15.654	-.011	.071*	.000	-.051	-.048	.079**	.006	.064*	-0.031	.113**	-.012	.042	-.072*	1.000			
15 inc	6.67	3.53	-.018	-.044	-.002	.051	.002	.002	.023	.011	.044	.024	.028	-.025	.093**	-.071*	1.000		
16 house	692.65	288.16	-.065*	-.025	.069*	.049	.001	.021	.095**	-.027	-.117**	-.001	-.016	.013	.042	-.021	.249**	1.000	
17 edu			-.083**	-140**	-.078**	.086**	.043	-.137**	.030	-.006	.030	.030	.008	-.006	.109**	-.087	.196**	.060*	1.000

* = p<.05 and **p<.01

1. evac: evacuated or did not evacuate
2. tele: reported receiving emergency telephone warning to evacuate
3. med: reported receiving a warning by TV to evacuate
4. num: number of official warnings received
5. inf: reported receiving a warning from informal source
6. cont: contacted peers about the warning
7. sup: had prepared an emergency supply kit
8. mit: had taken one or more measures to protect home from wild fires
9. exp: have evacuated in the past
10. cues: saw smoke or flames from fires
11. prob: perceived wildfires to be a problem in area
12. threat: perceived threat to residence from wildfires
13. loc: located in urban or rural area
14. age: age in years of respondent
15. inc: household income
16. house: value of residence
17. edu; level of education

Appendix D: Regression Results

Evacuation

1. Regression with all independent variables included

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.683	.245		2.791	.005
	prob	-.015	.035	-.017	-.426	.671
	threat	-.041	.019	-.086	-2.175	.030
	mit	.081	.034	.094	2.411	.016
	sup	-.010	.035	-.012	-.300	.765
	exp	.061	.040	.061	1.525	.128
	cues	.115	.041	.104	2.791	.005
	med	-.032	.034	-.037	-.934	.351
	inc	.000	.005	-.007	-.179	.858
	edu	-.028	.022	-.049	-1.274	.203
	house	-6.433E-5	.000	-.041	-1.069	.285
	num	-.035	.035	-.045	-1.003	.316
	cont	.049	.039	.049	1.265	.206
	age	-.002	.001	-.057	-1.497	.135
	loc	.174	.041	.169	4.296	.000
	tele	.117	.050	.108	2.355	.019
	inf	.131	.041	.126	3.221	.001

a. Dependent Variable: evacuated (yes or no)

2. Regression with reduced variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.469	.155		3.016	.003
	threat	-.051	.017	-.107	-2.972	.003
	mit	.073	.031	.084	2.315	.021
	cues	.099	.039	.088	2.509	.012
	loc	.162	.038	.153	4.203	.000
	tele	.148	.039	.138	3.771	.000
	inf	.140	.038	.133	3.653	.000

a. Dependent Variable: evacuated (yes or no)

1. evac: evacuated or did not evacuate
2. tele: reported receiving emergency telephone warning to evacuate
3. med: reported receiving a warning by TV to evacuate
4. num: number of official warnings received
5. inf: reported receiving a warning from informal source
6. cont: contacted peers about the warning
7. sup: had prepared an emergency supply kit
8. mit: had taken one or more measures to protect home from wild fires
9. exp: have evacuated in the past
10. cues: saw smoke or flames from fires
11. prob: perceived wildfires to be a problem in area
12. threat: perceived threat to residence from wildfires
13. loc: located in urban or rural area
14. age: age in years of respondent
15. inc: household income
16. house: value of residence
17. edu: level of education

Reverse 911 call

a. Regression with all independent variables included

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.597	.172		3.458	.001
	prob	.088	.027	.091	3.292	.001
	threat	-.003	.015	-.005	-.193	.847
	mit	-.063	.026	-.065	-2.406	.016
	sup	-.015	.027	-.015	-.574	.566
	exp	.097	.032	.082	3.020	.003
	media	.477	.028	.455	17.257	.000
	income	-.003	.004	-.021	-.784	.433
	edu	-.059	.016	-.098	-3.721	.000
	house	-7.865E-5	.000	-.045	-1.701	.089
	loc	-.002	.033	-.002	-.065	.948
	inf	.118	.036	.084	3.257	.001
	Age	.002	.001	.076	2.934	.003

a. Dependent Variable: Received 911 Call (yes or no)

2. Regression with reduced variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.531	.152		3.491	.001
	prob	.091	.025	.094	3.640	.000
	mit	-.062	.026	-.064	-2.425	.015
	exp	.087	.031	.073	2.759	.006
	media	.472	.027	.451	17.224	.000
	edu	-.064	.016	-.106	-4.079	.000
	inf	.118	.036	.084	3.255	.001
	age	.002	.001	.078	3.009	.003

a. Dependent Variable: Received 911 Call (yes or no)

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EVACUATION DECISION MAKING AND BEHAVIORAL RESPONSES: INDIVIDUAL AND HOUSEHOLD

Prepared for the Hurricane Forecast Socioeconomic Workshop, February 16–18, 2005

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Note: This paper is a work in progress. We gladly accept any input or thoughts on the content of this discussion. We also appreciate any additional relevant references or studies that we have not covered in this discussion.

INTRODUCTION

In the first part of this white paper we review the history of research on evacuation decision making. A wide range of factors has been found that affect people's evacuation decisions after they hear hurricane forecasts and other information. Risk judgments are a major part of the decision, and hurricane risk perceptions have been studied from many different perspectives. This section ends with two summary diagrams illustrating how the different factors relate to each other.

In the second part we turn to work testing models that predict evacuation rates for actual hurricanes in addition to measuring the relative importance of decision factors. We discuss examples of multiple regression and ethnographic decision modeling.

The last part of the paper includes suggestions for the workshop about future research that would draw on the strengths of the earlier work reviewed while dealing more directly with risk and the information in and timing of hurricane forecasts.

WHO EVACUATES AND WHY: AN OVERVIEW OF RESEARCH ON HURRICANE EVACUATION

Understanding who evacuates and who does not has been one of the cornerstones of research on the pre-impact phase of both natural and technological hazards. Its history is rich in descriptive illustrations that concentrate on lists of characteristics of those who flee to safety and those who do not. These characteristics often focused on warning message characteristics such as how many times a warning was heard; thus implying that the more often warnings were heard, the more likely that they would be believed. These early attempts at understanding evacuation focused almost singularly on warning as the key to understanding evacuation.

If warnings were heard and ultimately believed, evacuation would be the end result. Research has not generally considered how people came to believe these warnings and even how they interpreted the warning itself. In fact, the individual has seemed almost removed from the picture with analysis focusing exclusively on external, almost objective, measures. As can be imagined, this approach had a limited utility in understanding evacuation, and as a result, more sociological models of evacuation were developed that attempted to focus more on evacuation and warning as social processes.

The problem, however, remained that even these more process-oriented models failed to look at the evacuation issue from a broad perspective. Models still tended to take an either-or approach, focusing almost exclusively on socioeconomic indicators or on risk or on warning messages. Few, if any, attempted to integrate a broad range of factors that modeled the evacuation decision-making process. Instead, the focus seemed to be on maximizing the predictability of models regardless of how decisions are made. This type of modeling resulted in contradictory models where one researcher found a variable significant and another found the variable not significant. Consequently, evacuation research still failed to inform the dialogue on how to motivate evacuation for those that need to flee to safety, while at the same time constraining those that should stay in place.

The underlying issue is that evacuation decision making, and perhaps hazard decisions in general, are complex processes that are not easy to categorize. Little research has focused on how individuals use information to assess their risk and consequently decide to take or not to

take protective measures. What complicates understanding the decision-making process is the fact that the setting itself is often uncertain when making hazard decisions in general, and always uncertain when making hurricane decisions. As a result, decision makers have a difficult time grasping and understanding not only the probability of the event, but also the range of options available to them. Although emergency managers and others assume that people will act rationally—hear a warning, realize danger based on the warning, and leave when told to do so (because the cost of staying outweighs the benefit)—more often than not, many of those at greatest risk choose not to take protective measures each time a warning is given.

As we see time and time again, our understanding of evacuation is extremely limited. Those expected to evacuate often do not, and those who should not evacuate (at least in the estimation of emergency managers) often do. And although modern-day hurricanes cause significantly more damage than deaths, at some point our inability to understand the evacuation phenomena will leave thousands on highways trying to flee and tens of thousands in their homes in low-lying locations vulnerable to storm surge.

Many approaches have been used to attempt to understand evacuation. >From descriptive models focusing almost exclusively on warning characteristics (Williams, n.d.), to more sociological models focused on warning as a process (Mileti, Drabek, and Hass 1975; Mileti and O'Brien 1992; Nigg 1993), evacuation research has had a long evolving history. One of the most important shifts in evacuation research has been the move away from trying to understand evacuation simply as a function of warning by recognizing that evacuation is also a function of various social, environmental and social psychological characteristics (Mileti, Drabek, and Hass 1975; Turner 1979; Perry and Greene 1982).

One of the key factors in understanding the evacuation decision-making process is risk perception. Knowledge about hazards alone is not enough to motivate action. Instead, information must be translated into a notion of pending danger. Although risk can be seen as a technical notion calculated based on the probability of events and the magnitude of specific consequences (Kasperson et al. 1988), others define it based on its social meaning, characterized by worry, dread, angst, concern, or anxiety (Rogers 1982; Jaeger et al. 2001). Others see risk as a more sociological concept that takes into account context and culture in the interpretation of what is dangerous (Turner 1979; Tierney 1994; White 1994).

In his 1987 article, "Perception of Risk," Paul Slovic asserts that "whereas technologically sophisticated analysts employ risk assessment to evaluate hazards, the majority of citizens rely on intuitive risk judgments, typically called 'risk perceptions'" (Slovic 1987, p. 280). Individuals employ mental strategies in their attempt to understand an uncertain world. Slovic (1987, p. 281) argues that difficulties in understanding probabilistic processes, biased media coverage, misleading personal experiences, and the anxieties generated by life's gambles cause uncertainty to be denied, risks to be misjudged, and judgments of fact to be held with unwarranted confidence.

What we can conclude is that models of individualized risk perception cannot be grand models; instead, they must include social dimensions based on the decision maker's frames of reference. More sociological models of risk take context and culture into account. Decision making and risk assessment do not happen in isolation, but rather at the intersection of social processes. Individuals process information through their own social lenses constructed by their particular cultural context, and as a result, individuals may well interpret the same information and

messages differently. Turner (1979) asserts that individuals often have problems assessing their own risk, and these risk perception problems derive from difficulties in obtaining and processing information. Understanding how people obtain and process information, then, is a vital part of understanding hurricane warning response.

Although risk perception is influenced by a wide array of factors, there is much that we do not know about risk, particularly from a sociological perspective. In fact, Tierney (1994, p. 5) argues that sociologists are increasingly arguing that existing research on risk can be criticized less for what it has found than for what it has failed to examine, and that sociology's contributions lie in focusing on what other disciplines take for granted, correcting existing biases, and filling in the gaps in our understanding of risks and risk analysis.

Tierney is most critical of the notion that there is some objective and knowable calculation that individuals can assess as it relates to risk. She refutes the idea that individuals know their level of objective risk. In other words, even when presented with information such as elevation of home or location near the coast, individuals may still interpret that information through their social lenses, and as a result, their risk determination is not objective.

Tierney takes a different approach by focusing on the idea that risk is socially constructed. "A social constructivist approach does not claim that there is no objective basis for believing that certain risks exist," (Tierney 1994, p. 6) but does not focus on these objective notions. Instead Tierney supports the notion that "the basic sociological task is to explain how social agents create and use boundaries to demarcate that which is dangerous" (Clarke and Short 1993, p. 379). Social and cultural factors cannot be ignored when analyzing and understanding risk. Information is processed within social contexts that influence how individuals assess the level of danger. As "potential" threats become realized threats, and as abstract vague ideas of potential damage become real, levels of danger may increase. At this juncture, decision making often becomes more complicated as decisions are in part influenced by risk perception, which itself is influenced by official messages characterizing the threat as real.

Understanding how people transition from hearing evacuation orders to deciding to evacuate is an interesting undertaking and fuses together, at least in part, what is known about warning compliance and risk perception. The majority of research on evacuation has focused on either the characteristics of those who evacuate and those who do not (Baker 1979; Cross 1979; Baker 1991; Fischer et al. 1995; Dow and Cutter 1998; Drabek 1999) or difficulties associated with evacuation (Baker 1980; Mileti and Sorenson 1987). Few, such as Perry, Lindell, and Greene (1981) and Gladwin and Peacock (1997), have attempted to model evacuation compliance.

Recognizing that evacuation research needs to look more at the decision-making process, recent research that examined evacuation responses for hurricanes Fran and Bertha found that household evacuation decisions are being influenced more by media and other household characteristics than by actual warnings (Dow and Cutter 1998), which emphasizes the need to broaden models beyond a singular focus on warning response. Over time, more complex models of evacuation compliance have been developed, with risk perception as the central focus and with more reliable indicators of evacuation behavior (Baker 1991; Perry 1994; Dow and Cutter 1998; Whitehead et al 2000).

These different approaches to the evacuation issue look at the dynamics of evacuation decision making in new ways (see Gladwin, Gladwin, and Peacock 2001, discussed later) and attempt to close the gaps in our understanding of how possible bad experiences during one evacuation can

affect future evacuation decisions (Dow and Cutter 1998; Dash and Morrow 2001). Although popular belief would seem to indicate that bad evacuation experiences result in a lower likelihood of evacuation for future storms, Dow and Cutter (1998) investigated possible effects of the "Crying Wolf" syndrome (an evacuation order for a storm that misses). Their work examined evacuation behavior for two 1996 storms in South Carolina, Hurricane Bertha (which had minimal effects), and two months later, Hurricane Fran. Dow and Cutter (1998) found that "despite the difference in the storms, there was a considerable degree of consistency in individuals' decision to evacuate" (p. 245). They report that 39% of respondents evacuated for both storms, and another 37% remained in their homes for both storms. Only 3% evacuated for Hurricane Bertha but not for the subsequent Hurricane Fran.

Similarly, Dash and Morrow (2001) investigated the effect of evacuation return delays on future evacuation plans. The hypothesis was that those who evacuated and experienced lengthy delays at roadblocks would be less likely to evacuate for the next storm threat, but the results suggested that those who experienced the delays are less likely to be adversely affected than those who knew of the delays only through media reports. Similar to the conclusions drawn in the work by Dow and Cutter (1998), Dash and Morrow conclude that risk perception has greater saliency in the decision-making process. Although models of evacuation have addressed the direct relationship between a host of factors and evacuation compliance, little has been done to develop comprehensive models of evacuation that focus on a breadth of decision-making factors.

What is called for, then, is new models that focus on the decision-making process, and not simply on evacuation outcomes. These new models must address three inter-related, major broad factors: individual-level indicators, event-oriented variables, and risk perception. Individual-level indicators are those characteristics of decision makers that influence the decisions they make. These measures are independent of hazard events and offer the context in which these decisions are made. They exist before any hazard messages are issued. Event factors, on the other hand, directly relate to the hazard. Risk is the assessment of how dangerous a hazardous event appears to be to the decision maker.

The goal is to develop a model that includes key components of decision-making processes. A key component to the model is risk perception, which is influenced by a host of factors that make it a very comprehensive measure. More important, however, is that risk becomes a product of not only the technical, but also the social. Renn et al. (1992, p. 139) argue that a "novel and integrative framework is necessary to analyze the social experience of risk and to study the dynamic processing of risks by the various participants in a pluralistic society." To do this, they argue that risk needs to be approached as both a social and technical concept through a "social amplification of risk" approach that tends to see risks from a broad perspective. Renn et al. (1992) define this approach as

> The concept of social amplification of risk is based on the thesis that events pertaining to hazards interact with psychological, social, institutional, and cultural processes in ways that can heighten or attenuate individual and social perceptions of risk and shape risk behavior.

Even though risk perception is a major factor in evacuation-related decisions, it is not the only influence; likewise, focusing only on individual-level variables fails to capture complexities of the decision-making process. Approaching evacuation as a process and not simply as an outcome

is key to understanding why some evacuate and some do not, and more important, determining what can be done to motivate more compliance.

To do this, a comprehensive model of evacuation that accounts not only for demographic variation (measured with socioeconomic indicators), but also for variables that are key to the decision-making process (such as hazard-specific factors including hazard knowledge) must be developed.. In addition, the model must include specific measures of risk perception. Some models may, for example, result in understanding large amounts of variation (Perry 1985), but this does not help us understand the decision-making process itself.

Figure 1 outlines a basic model of evacuation that includes decision-making frames and factors. The model, however, although comprehensive in its included variables, does not address the complicated nature of how the factors influence each other. At this point, it is meant for illustrative purposes to highlight the types of factors that must be included.

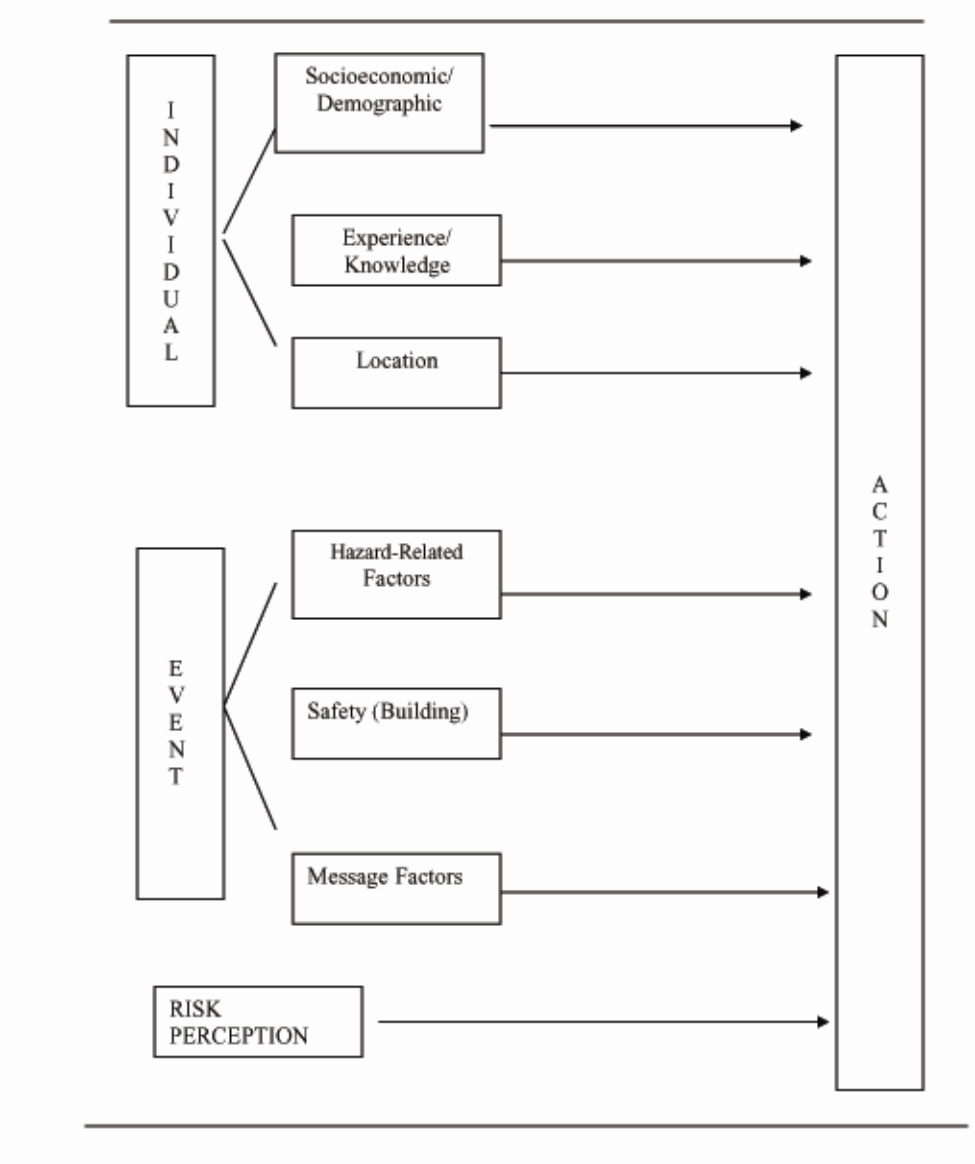

Figure 1. Basic model of evaluation

Figure 2 is a more comprehensive model that illustrates a variety of the complicated relationships among variables. In addition, it delineates some of the specific variables that should be included in evacuation models.

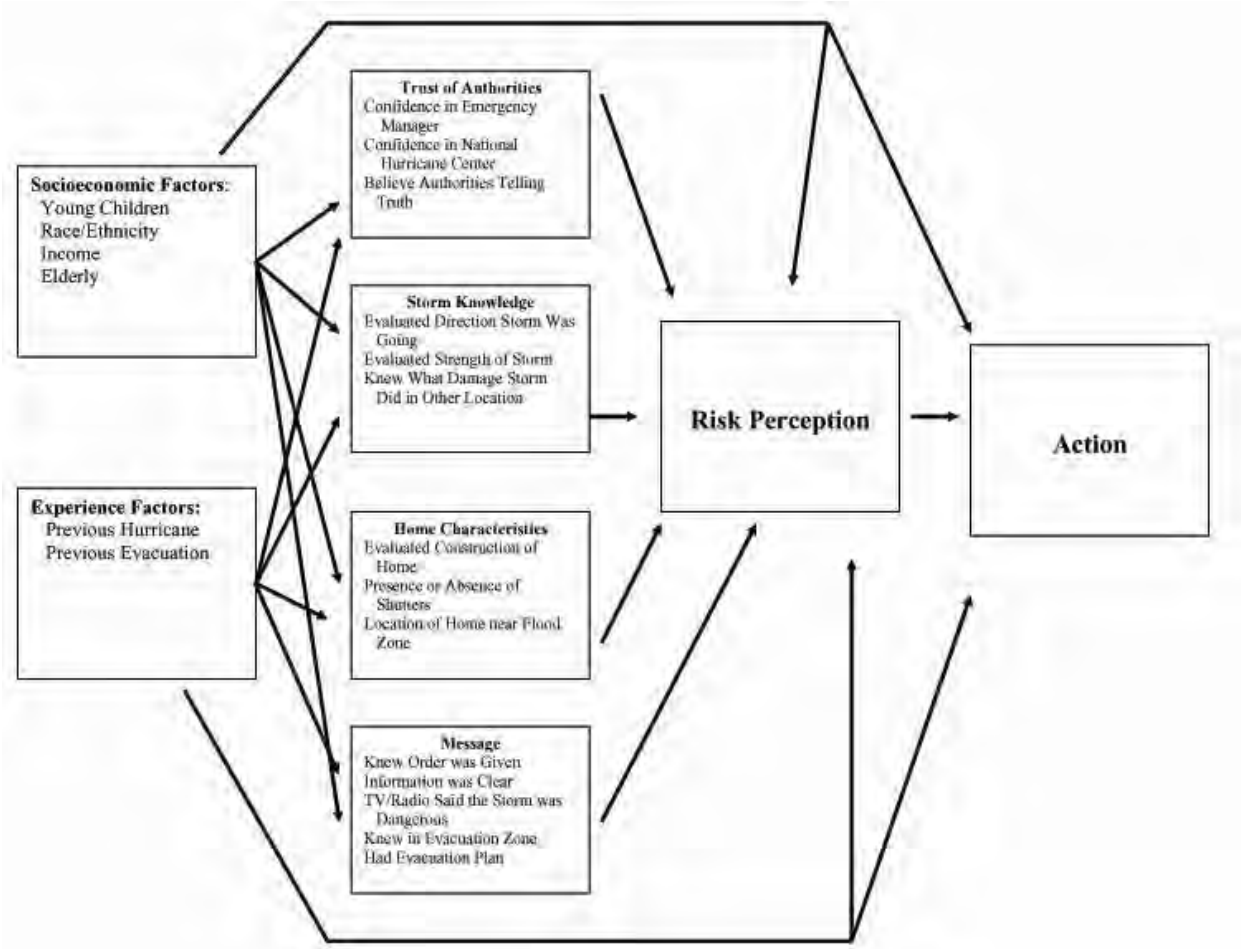

Figure 2. Comprehensive model of evaluation

Future research to understand the evacuation issue must move beyond understanding the characteristics of those who evacuate and those who do not. We must learn what factors people consider as they make their decisions. Today, many people hear that a storm is approaching the United States or the Caribbean, and on their own, they seek information from weather Web sites and determine their own risk. We know little about how this new information is used. Do individuals have the capacity to understand and process the information they use to make their evacuation decisions, and how does this information affect not only the decision to evacuate, but probably more importantly, their risk perception? Do people consider how safe their home is; what role, for example, does having shutters on their home influence risk perception and evacuation?

More then anything, however, we must move beyond seeing evacuation as a linear process. Even though much has been learned about evacuation over time, we still fail to understand how complicated individuals find the process of deciding to evacuate. There is no denying that some people are simply "evacuators," and little is needed to motivate them to take shelter when needed. As recent storms have shown, though, many still fail to recognize their danger. Until we have a better understanding of what influences people's risk perception and consequently their decision to evacuate, we will not be able to effectively retool messages or educational programs to foster increased risk awareness.

MODELS PREDICTING EVACUATION RATES AND DECISIONS

In this part, we present some examples of recent work on modeling evacuation decisions. The importance of these models is that they are steps in the direction of filling in the link between forecasts and the effects of evacuation rates such as clearance times, shelter usage, potential casualty rates, and other quantitative measures important to emergency managers and other officials.

Dependent Variable: Actual rather than Hypothetical Evacuation

It is important to note that hypothetical questions do not give good estimates of evacuation rates. Generally they result in estimates much higher than would be expected for an actual hurricane. With that said, however, hypothetical questions can show some interesting effects of hurricane experience. For example, the following hypothetical question was asked each year by Florida International University (FIU) researchers in a statewide poll of Florida residents (Heise, Gladwin, McLaughen 1992):

> In the future, if you had two days notice to prepare for a hurricane of the intensity of Hurricane Andrew, which of the following would you be most likely to do? Would you leave the area completely in order to get out of the path of the storm, would you go to a shelter, would you go to stay with family or friends in the area, or would you stay in your home during the storm?

Figure 3 shows results from 1992 (asked shortly after Hurricane Andrew) through 1998 measuring the percentage of people who said they would not stay in their home. There is a strong "Andrew effect" leading to higher estimates in 1992 and then declining over the next 2 years. For this chart three groups of respondents are compared: people who do not live in areas that were affected by Andrew, people living in areas that experienced hurricane-force winds but were north of the eye wall, and those living in south Miami-Dade County where the Andrew eye and eye wall passed. For the latter two groups there is a clear experience effect that reduced evacuation rates.

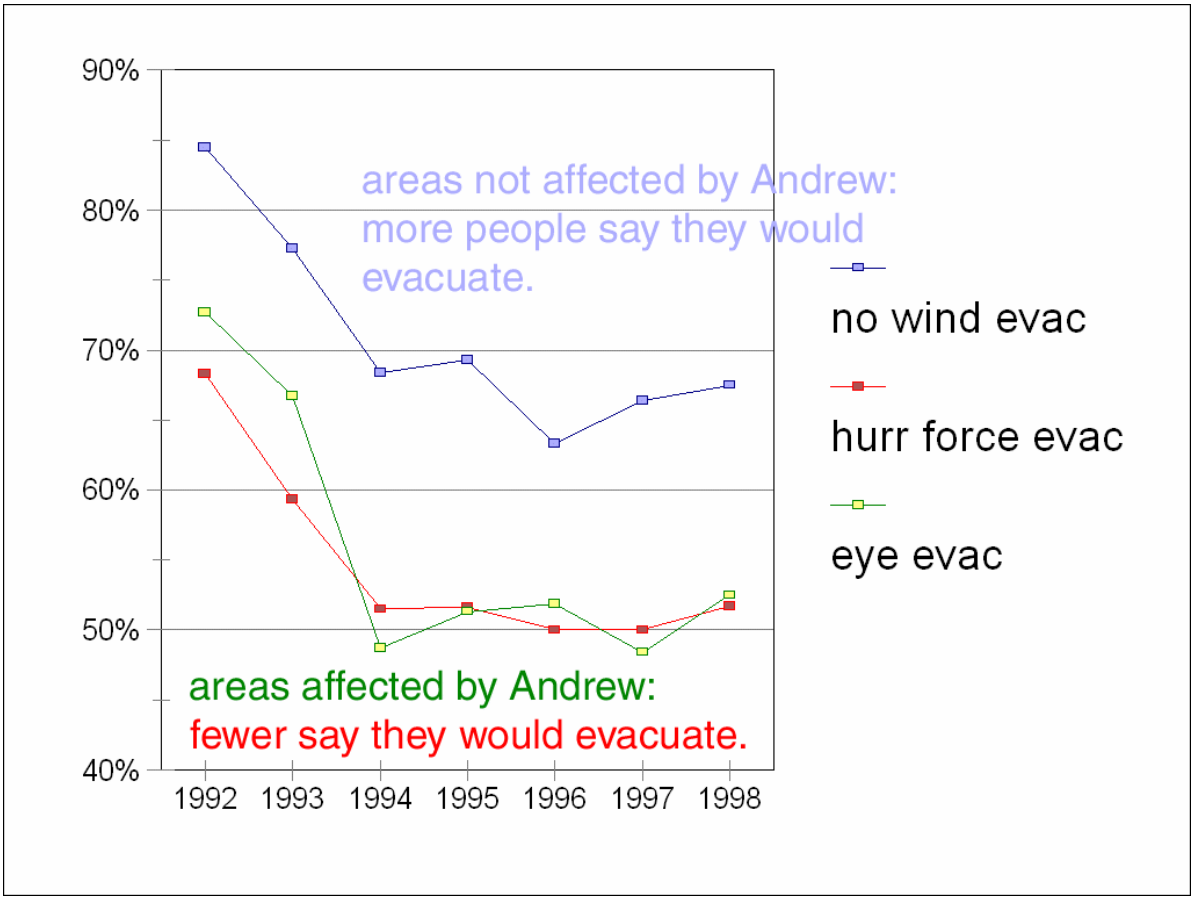

Figure 3. Evacuation findings, 1992–1998

Regression Models

Figures 1 and 2 above outline models that combine a number of factors involved in predicting hurricane evacuation. Multiple regression provides a way to test these models, evaluate the relative importance of decision factors, and measure the extent to which these variables can predict actual evacuation behavior. In these studies the dependent variable is usually a 1/0 dummy variable: evacuate or do not evacuate. Logistic regression is the most commonly used method to model such data.

We present two examples of these regression models, one based on Hurricane Andrew evacuation data (Gladwin and Peacock 1997), and the other based on data from Hurricane Georges (Dash 2002).

In deciding on the variables to collect for the Hurricane Andrew study, the researchers were guided by the literature discussed previously. This resulted in the following list of hypotheses (Gladwin and Peacock 1997, pp. 65–66, quoted by permission of the book editors/copyright holders).

Households in evacuation areas will evacuate if they are told by authorities to do so. This is the most obvious hypothesis and one on which most emergency management directors depend. Households simply do not have all of the necessary information on which to base an evacuation

decision, yet they live in very vulnerable locations. They must depend on decisions made by authorities and the literature clearly suggests that they do. Our sample results substantiate this.

- *People are more likely to evacuate if they hear the warning in person from a family member, friend, or authority figure rather than just from the media.* Being told to evacuate in person greatly increases the chances a household will evacuate. We asked our respondents how they found out they were in an evacuation zone and should evacuate—specifically, if they heard it from a friend, neighbor, relative, or authority.
- *The experience of part hurricanes tends to make people confident that they can weather hurricanes in their homes.* It is often said that experience is the best teacher; i.e., get burned by touching a stove once and you will not do it again. Unfortunately, the hurricane "experience" varies greatly. Hurricanes rarely hit exactly the same place, and they vary in strength, intensity, rainfall, and speed. Nevertheless, experience tends to lessen the probability of evacuating because "hurricane sages" think that they could safely go through any hurricane if they have lived through one (Quarantelli 1980, p. 40). Although some South Florida residents had experienced previous hurricanes, few had made evacuation decisions before or had experienced a Category 3+ hurricane. In our data we asked if anyone in the household had experienced a hurricane before and also how long the household had been located in South Florida.
- *Families headed by aged persons, or extended family households containing aged persons, are less likely to evacuate in response to hazard warnings.* There are a variety of reasons for this expectation (Perry 1979, p. 35). First, as discussed above, older people are more likely to have experienced a hurricane and to believe they can survive in their own homes. Second, the difficulties associated with evacuation, particularly to shelters, are greater for older people. As the young man quoted at the beginning of this chapter said, "My grandmother wanted to stay because she knew that it wouldn't be comfortable being with a lot of people." Third, older people in both urban and rural areas may be more isolated from information about the risks of staying. For our analysis we define an elderly household as one in which at least one person was at least 70 years old.
- *Households with young children are more likely to evacuate.* Furthermore, women are more likely to plan actively for evacuation while men are more likely to wait passively until ordered to do so. Households with young children can be assumed to be more likely to have the mother as a major decision maker, thus increasing the likelihood of evacuation. In our data, households with at least one child under 10 are designated as households with young children.
- *Ethnic minorities are less likely to evacuate than Anglos.* This finding is probably a result of economic conditions rather than race or ethnicity per se in that minorities may have fewer evacuation options. In our analysis, Black and Hispanic evacuation is compared to Anglo evacuation.
- *People with higher incomes are more able to and thus more likely to evacuate.* They are less constrained by transportation options (such as personal auto, plane, or taxi) and can afford to stay in hotels. To the extent that property security is an issue, higher income neighborhoods tend to be less open to looting and are more likely to have theft insurance; thus, there is less inhibition about leaving.

- *People living in small households are more likely to be mobile and able to evacuate.* One of the major findings of evacuation studies is that households tend to evacuate as a whole (Drabek 1983). It follows that smaller households will be less constrained and will find the logistics of evacuation easier. Hence they could be expected to evacuate at higher levels.
- *People living in multiunit buildings are more likely to evacuate than those living in single-family dwellings.* Many multifamily units along the coast are required by management to be evacuated. Furthermore, residents of single-family dwellings, particularly owners, are more likely to be concerned about the security of their property and hence to stay to protect it.
- *The ability of a household to evacuate will be contingent on preparation.* Although we do not have a single evaluative measure on level of household preparation, we do have the time a household began to prepare. Given the relationship between evacuation and preparation time, it is possible that households that were well prepared needed only to start preparation time just before evacuating. However, we speculate that in general the later a household began to prepare, the less likely it was to evacuate because it was caught in a dilemma between evacuating versus preparation.

Table 1 shows the results of one set of regression models (from Gladwin and Peacock 1997, p. 68).

Table 1. Logistic regression models predicting household evacuation

		Model 1: hurricane factors	Model 2: household characteristics	Model 3: combined hurricane and household factors
Number of cases		1119	1081	929
Constant		–1.45	0.79	–0.35
Aware of living in evacuation zone (1:yes 0:no)	**B**	**1.98***		**2.12***
Standardized B		0.55		0.47
Exp (B)		7.21		8.35
Personally told of evacuation (1:yes 0:no)		**0.57†**		**0.39**
		0.10		0.06
		1.76		1.48
Mean hours before began preparing		**–0.01**		**0.00**
		–0.05		–0.01
		0.10		0.10
Prior hurricane experience (1:yes 0:no)		**–0.55***		**–0.36**
		–0.16		–0.08
		0.58		0.70
Household size			**–0.50***	**–0.52***
			–0.45	–0.38
			0.99	0.60
Years lived in South Florida			**–0.01‡**	**0.00**
			–0.12	–0.01
			0.99	0.10
Black (1:yes 0:no)			**–0.07†**	**–0.52**
			–0.15	–0.09
			0.99	0.60
Hispanic (1:yes 0:no)			**–0.39‡**	**0.03**
			–0.12	0.01
			0.68	1.03
Household income			**0.00**	**0.00**
			0.08	0.05
			1.00	1.00
Household with elderly (1:yes 0:no)			**–1.40***	**–1.42***
			–0.30	–0.25
			0.25	0.24
Household with children (1:yes 0:no)			**1.64***	**1.93***
			0.44	0.43
			5.14	6.90
Single family dwelling (1:yes 0:no)			**0.97***	**–1.01***
			–0.28	–0.24
			0.38	0.36
X^2		218.84*	191.68*	306.09*
pseudo R^2		0.21	0.25	0.34

Source: FIU Hurricane Andrew Survey.

*$p \leq .01$

†$p \leq .02$

‡$p < .05$

Hurricane experience and years in South Florida have significant and negative consequences in the first and second models, but in the third their effects are no longer significant. Households having elderly members, however, were significantly less likely to evacuate—about one-quarter as likely. Households with children under 10, on the other hand, are about seven times more likely to evacuate. Finally, households living in single-family housing are about one-third less likely to evacuate.

Overall, three types of variables stand out as unique and significant predictors of evacuation. First, being in an evacuation zone; second, having demographic factors associated with small households and the presence of either elders (a negative effect) or children (a positive effect); and third, living in a single-family dwelling**.** It is interesting to note that having children in the household and being located in an evacuation zone closely rival each other in their relative importance as predictors.

Of all the factors considered, the one most often mentioned, and the strongest predictor, is living within an evacuation zone. This factor in some sense captures risk, in that households located in evacuation zones are officially recognized as being in danger of damage and mortality. In light of the salience of this factor, it seems reasonable to suggest that the decision-making process itself, and hence the way factors influence evacuation, would be shaped by whether or not a household is located in an evacuation zone. When we tested how the factors influenced household evacuation depending on whether or not a household was located in an evacuation zone, we found very different processes at work (Table 2, from Gladwin and Peacock 1997, p. 70).

The two models in Table 2 predict household evacuation separately for those within and outside evacuation zones. Although there are similarities with respect to the factors previously found to be important, a number of differences also emerge. First, household size, the presence of an elder or children, and residing in a single-family dwelling remain strong predictors, regardless of a household's location. For households within evacuation zones, however, years in South Florida and income become significant factors as well. In particular, the longer a household has resided in South Florida, the lower its odds for evacuating. Upper income households were much more likely to evacuate. It is also interesting to note that Black households (of which majority are African American) that reside in evacuation zones were less likely to evacuate, with their odds being reduced by almost two-thirds compared to Anglos. In the case of both models, there is much left to account for when predicting evacuation; however, these findings clearly suggest that very different factors influenced the evacuation decisions made by South Floridians living in these two locations.

Table 2. Logistic regression models predicting household evacuation, in and out of evacuation zones

	Live in evacuation zone	Not in evacuation zone
Number of cases	372	759
Constant	1.53	0.04
Personally told of evacuation (1:yes 0:no)	**3.38**	**0.63**
B		
Standardized B	0.05	0.09
Exp (B)	1.46	1.88
Mean hours before began preparing	**–0.01**	**0.00**
	-0.03	0.38
	0.99	1.00
Prior hurricane experience (1:yes 0:no)	**0.03**	**–0.27**
	0.01	-0.09
	1.03	0.77
Household size	**–0.38***	**–0.83***
	–0.17	–0.92
	0.69	0.44
Years lived in South Florida	**–0.02†**	**0.00**
	–0.09	0.03
	0.98	1.00
Black (1:yes 0:no)	**–0.84†**	**0.47**
	–0.08	0.12
	0.43	1.59
Hispanic (1:yes 0:no)	**0.11**	**0.20**
	0.02	0.07
	1.12	1.22
Household income (1:yes 0:no)	**0.00†**	**0.00**
	0.08	–0.04
	1.00	1.00
Household with elderly (1:yes 0:no)	**–1.57***	**–1.58‡**
	–0.14	–0.41
	0.21	0.21
Household with children (1:yes 0:no)	**1.88***	**2.14***
	0.28	0.71
	6.56	8.47
Single family dwelling (1:yes 0:no)	**–1.08***	**–0.79***
	–0.16	–0.28
	0.34	0.46
X^2	93.02*	96.13*
pseudo R^2	0.25	0.15
	0.25	0.15

*$p \leq .01$

†$p < .05$

‡$p \leq .02$

Work done by Nicole Dash (2001) on the Hurricane Georges evacuation in Monroe County (Florida Keys) and Miami-Dade County extended this approach to include a number of important additional variables, including what people attended to in the hurricane forecast as

well as a subjective risk measure. The research tested the model framework presented in Figure 2. A number of logistic regression models were run on subgroups of variables and to test interaction effects. Pseudo R^2 measures indicated the amount of variance in the evacuation decision explained, from .335 (Cox) to .479 (Nagel). In the sections that follow, we list some of the variables that proved to be significant predictors of the evacuation decision.

Risk

This is an index created by adding responses on the following two questions: (1) "As it approached, how dangerous did Hurricane Georges seem to you then, in terms of death or serious injury? Would you say extremely dangerous, very dangerous, somewhat dangerous, or not dangerous?" and (2) "How concerned were you about damage or destruction to your home when George approached? Were you very concerned, somewhat concerned, only a little concerned, or not concerned?" The scale was positively related to increased likelihood of evacuation. Respondents who thought the hurricane was dangerous were also asked why they thought so. Results of this follow-up question were coded for storm direction, storm strength, and damage already done by Hurricane Georges in the Caribbean. Modeled by themselves all three predicted higher evacuation rates, although only the last appeared to be a unique predictor.

The following are some findings from the Dash (2002) analysis:

- Feel they should do what is best for them even if authorities say otherwise: "Yes" answer decreased likelihood of evacuation.
- Knew evacuation order had been given: Increased likelihood of evacuation.
- Household had evacuation plan before Georges: Increased likelihood of evacuation.
- Evacuated for Hurricane Andrew: Increased likelihood of evacuation.
- Miami-Dade resident who was living in the county north of Hurricane Andrew eye/eye wall impact area in 1992: Decreased evacuation.
- Family size: Larger family sizes decreased likelihood of evacuation.
- Young children in household: Increased likelihood of evacuation.

The question remains as to how these characteristics affect decision making. For example, do decision makers with large families think directly about the issue when deciding whether to evacuate or not? Or is it simply a lens through which information is filtered?

Ethnographic Decision Models

Logistic regression models of the evacuation decision typically capture at most about 30% to 50% of the variance in the decision. Some of the unexplained variance can undoubtedly be explained by idiosyncratic factors. Factors that are contingent on a particular circumstance of a household, however, may strongly affect the decision. Such dependencies can be modeled in regression through the use of interaction terms and dummy variables, but doing so requires guessing at the effects and then testing them in the model. These dependencies are not normally collected in evacuation surveys, whether quantitative or qualitative.

To deal with this situation Gladwin, Gladwin, and Peacock (2001) utilized hierarchical ethnographic decision modeling. This approach offers a systematic procedure whereby, through

a set of iterative processes, a general decision model—to evacuate or not evacuate in the face of a hurricane threat—is inductively derived from specific individual reports about recent evacuation decisions. Data collection begins inductively rather than deductively. This method does not depend on conventional, rational choice theory assumptions of complete information and a unitary utility function for the household: individuals within the same household, acting in their own self-interest, are assumed to gather information about the hurricane and assess the danger to themselves, their families, their businesses, and their pets, but they may do it differently and reach different conclusions that then must reach convergence if the household is to stay or evacuate together.

For this study residents were interviewed who had been in South Florida during both hurricanes Andrew and Erin in 1994 and 1995. From the personal reports of 60 key individual decision models were constructed. The interviews averaged about 1 hour each and were taped. Respondents were asked to mentally put themselves back into the situation in which they found themselves as the hurricane approached, establishing a general overall sequence of events as they remembered them. With the assistance of the interviewer, respondents were then re-guided through the various decision points that emerged from their stories. Many of these decision points were ones where the decision seemed automatic in that respondents could not remember making a decision (cf. Tversky 1972). When questioned, however, people were able to recall things about the decision such as, “In those days when I heard the authorities put out an evacuation order, I just assumed I would leave. I didn’t question it. Now I might do it differently.” Based on these accounts as well as answers to the contrasting question, “Why did you decide to evacuate with Hurricane Andrew but not with Hurricane Erin?” flow charts were constructed to model the decision of each household. These were then analyzed and combined into a joint flow chart that modeled the decisions of all the households. This can be done for decision processes where inductive study reveals that most households face the same top-level information (e.g., information they get from television and other media sources about hurricane risk and evacuation orders) and constraints.

After the initial development of the model, it was pre-tested and revised further during 40 phone interviews with Miami-Dade County residents. Because the final goal was to test the resulting tree on a large random sample, in addition to revising the decision tree, part of the pre-testing stage consisted of developing an instrument in which every criterion in the decision tree was converted to a question in the questionnaire. The decision tree model along with the questionnaire was repeatedly revised until the decision was made to finish the inductive phase of the work.

Next was a deductive test of the resulting model of hurricane evacuation decision processes via phone interviews. In this step, different interviewers with a separate random sample of 954 South Florida residents, who mostly lived in evacuation zones in Miami-Dade County at the time of Hurricane Andrew. The model it was converted into a simple SPSS program that recorded the number of successes and failures in prediction on each path of the tree. The overall success of the decision tree was then determined by the percentage of individual decisions that were correctly predicted. Most of the decisions were correctly predicted (87%), although the results of this model with its many branches and degrees of freedom cannot be directly compared with regression R^2s.

Figure 4 shows the top-level decision tree for households that are not solely composed of elders. Note that some of the variables are the same as those incorporated in Dash’s model discussed

above (Dash 2002). Because we were all part of the FIU disaster research team, we were able to incorporate findings from a study of one hurricane into survey questions about another.

Hexagonal boxes in Figure 4 indicate subroutines in the decision model that are not shown in Figure 1. The important words in these boxes are “unless” and “evacuate now unless something else happens.” The things that happen here are those that make people delay until it’s too late, or evacuate and get caught in traffic jams. In the Hurricane Andrew model interviews, the event was in the past and the decisions had been made so a static model could be devised. A real-time evacuation decision model would have to handle these decision routines cyclically through the time preceding the hurricane impact.

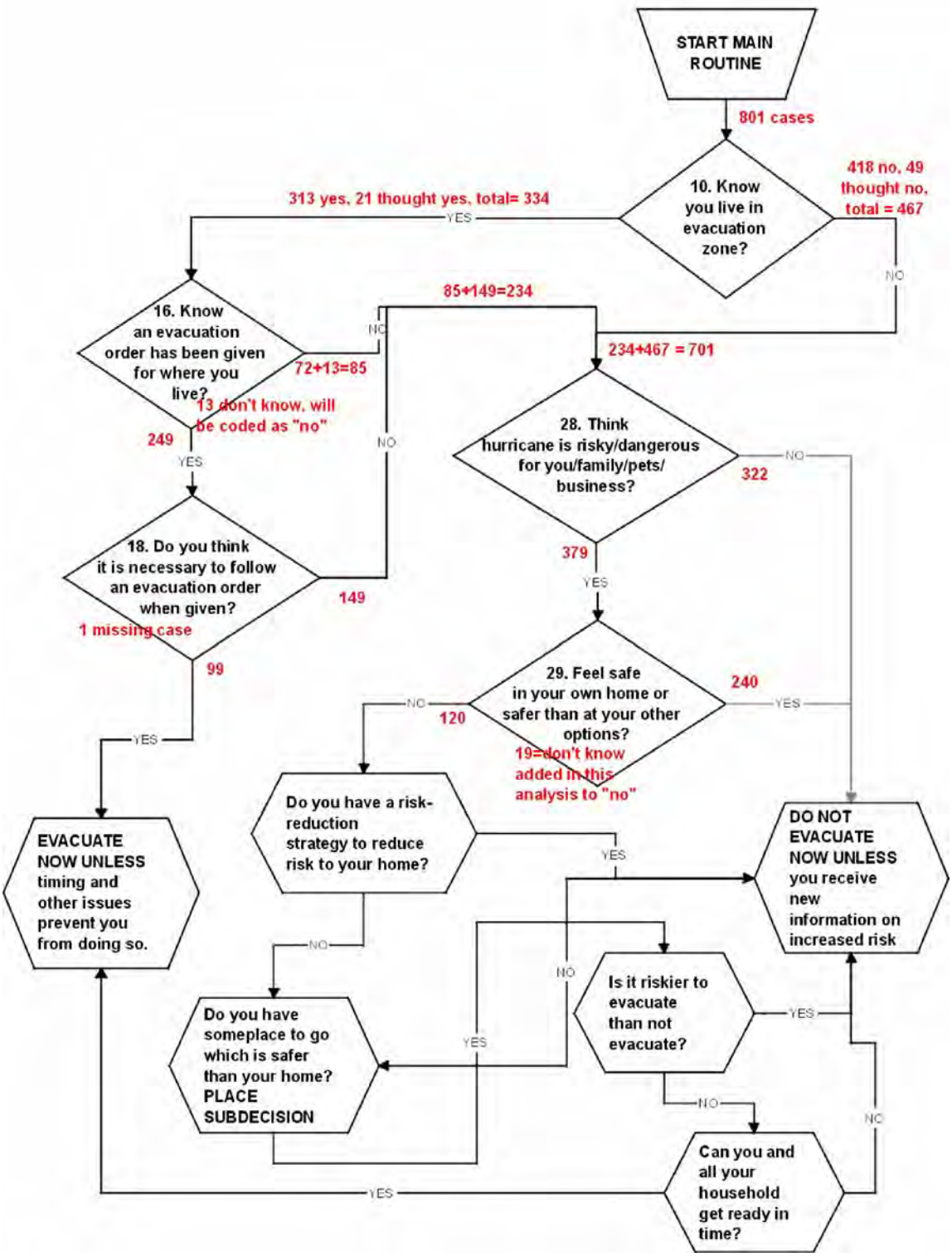

Figure 4. Top-level decision tree for households that are not solely composed of elders

WHERE DO WE GO FROM HERE?

As this review of research indicates, much progress has been made in understanding evacuation behavior. Different behavioral research disciplines have contributed in ways related to their theoretical orientations. Economists and psychologists coming from a rational-choice perspective have found systematic deviations from optimal behavior (Kunreuther and Linnerooth 1984; Slovic, Fischhoff, and Lichtenstein 1984; and others cited in the first part of this paper). Psychologists and others using a social cognition framework have shown the importance of self-efficacy, particularly that which can be derived from a better understanding of forecast information (Burnett et al. 1997; Dow and Cutter 1998; Benight, Gruntfest and Sparks 2004). Still other researchers study how information processing and verification constraints affect the timing of evacuation decisions (Lindell and Prater 2002, Lindell and Perry 2004). Sociologists and anthropologists using multiple regression and ethnographic decision modeling have been more inductive and eclectic, opting to model any relevant variables that will make evacuation rates more predictable. We believe that all these approaches are valuable and have contributed to a better understanding of the evacuation process. What should come next in evacuation research?

Before giving our suggestions we should note that it would be a good idea to ask forecasters and emergency managers what they want evacuation research to do, which can be done at the workshop. At this point, however, we believe the following three objectives to be important:

First, more accurate and geographically focused prediction of evacuation rates is needed. This would give emergency managers a better idea of where evacuation orders would be followed and where they (and forecasters, the media, etc) should focus their efforts to improve communication of forecast information and risks people face if they do not evacuate. Furthermore better prediction of evacuation rates also enables better estimation of potential hurricane consequences that depend on evacuation rates, including clearance times, shelter usage, and potential casualty rates.

Second, we should look much more closely at the content and flow of information from forecasters to decision makers—decision makers being both officials who make evacuation calls and people who are supposed to evacuate when ordered. This is important because it tells forecasters and others down the information line how to best shape and communicate forecast messages. A good example is the current discussion of the “cone of probability” versus the forecast track. To decision makers forecast information feeds into subjective indicators of risk, and the process of assessing one’s risk. For example, although we can argue that those in mobile homes are more vulnerable, some still believe that mobile homes are safe. We must first understand how people come to their risk conclusions, including how they interpret warning messages and assess the safety of their homes, before we can effectively suggest changes to the messages themselves.

Third, we must better incorporate time into evacuation modeling. In urban areas people often wind up deciding to evacuate too late, becoming caught in traffic jams that potentially expose them to greater risk than if they had stayed home. Or they may hear about the traffic and not evacuate when they should. With better temporal modeling we can more easily what will get people to evacuate in a timely manner. Evacuation behavior models can also be used as inputs to traffic-clearing models if they incorporate time in their predicions.

What new research emphases might be added to the kind of research already being done that would move more rapidly in the direction of meeting these three objectives?

One important task is to look more closely at what people are thinking and doing when they comprehend and act on forecast warning messages. Some research is exploring this in areas other than hurricane evacuation (Vàri 2003), but it is needed here. How do people use warning information? How much do they simply take and accept what they hear, how much do they gather information and then interpret it for themselves, and how do they do the interpretation? These are questions about cognition and we believe that more cognitive research should be incorporated to understand evacuation thinking and decision making. People interpret warning messages in terms of their beliefs and knowledge. These are usually remembered as scenarios or stories (Schank and Abelson 1977), often taking the form of causal relations—beliefs about likely consequences of events that get modified through experience (see Cameron 2003 on health risk perceptions). Other important cognitive work to incorporate is what is known as "socially distributed cognition." This work studies decisions made by groups of people with different areas of expertise and authority, often in situations where considerable risk is involved if decisions are not made correctly (Hutchins 1995). In such circumstances correct information transmission is critical and relies on commonly understood measuring scales. This is difficult in situations such as hurricane warning where forecasters, emergency managers, and the public have very different levels of expertise and understanding of scales and diagrams representing hurricane risk. Although these factors have been covered in the literature reviewed in this paper, we feel that most of it has been anecdotal instead of a connected systematic analysis.

More research of this type will directly address the second objective in our previous list. It is also likely to provide a better rationale for selecting variables in building regression models and thus better predicting evacuation rates. As it relates to the third requirement, this research would furnish more detailed mechanisms for the operation of temporal decision models at the household level and at the large-scale information flow level (Lindell and Prater 2002). It could also enable new types of evacuation decision simulations to be constructed in the same manner as expert system programs (Giarratano and Riley 1994) and model evacuation decisions over time as new information and constraints get applied to evacuation decision makers.

A focus on how people conceptualize hazard information and risk also gives wider scope to the understanding of ethnic and cultural differences in evacuation decision making (Douglas and Wildavsky 1983; Zhang, Prater and Lindell 2004), as well as in modeling those differences (King et al. 2003).

There is one difficulty with this suggestion of attending more closely to what people think when they make evacuation decisions, and we think it points to a weakness of most evacuation research. The difficulty arises from the fact that after a hurricane hits or misses and time goes by, people have trouble remembering exactly what happened hour by hour and what their different understandings were as they were making their decisions. Studies necessarily have to be done after the fact, and people often rationalize that they made the best decision, altering their memory in the process. We need people ready to go out and ask about decisions during an event or right afterward. An example of one real-time approach was a pilot study done by researchers at FIU's Institute for Public Opinion Research. Using a short questionnaire based on criteria obtained from previous FIU evacuation decision research, the pilot study investigators called people in South Florida who were under evacuation orders as Hurricane Francis approached. In one night,

101 people were interviewed for this pilot, and 45 of them were re-contacted after the hurricane to find out what they did (see http://www.fiu.edu/orgs/ipor/pira/evacpilot/ for details).

A series of pilot studies throughout the East and Gulf coasts, followed by educational programs and evaluation, will be necessary to effectively develop better ways to motivate evacuation compliance.

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WHEREAS, this amendment to the Santee Municipal Code has been determined to be exempt from review by the San Diego Regional Airport Authority as it would not affect Gillespie Field Airport operations nor result in land use incompatibilities with the Gillespie Field Airport Land Use Plan; and

WHEREAS, this project is exempt from the provisions of the California Environmental Quality Act pursuant to Section 15308 (Class 8) of the CEQA Guidelines because the project is an action being taken in compliance with state mandates where the process involves procedures for the protection of the environment which do not have the potential to cause significant effects on the environment; and

WHEREAS, on October 23, 2019, the City Council of the City of Santee held a duly advertised public meeting to introduce the Ordinance by title only and to set the Public Hearing on this proposed ordinance for November 13, 2019; and

WHEREAS, the City published notice of the aforementioned public meeting on October 10, 2019, and thereafter published notice of the Public Hearing pursuant to California Government Code Section 6066 on October 31, 2019 and November 7, 2019; and

WHEREAS, the City Council held a Public Hearing on November 13, 2019, at which time all interested persons had the opportunity to appear and be heard on the matter of adopting the 2019 California Building Standards Code, as amended herein; and

WHEREAS, any and all other legal prerequisites relating to the adoption of this Ordinance have occurred.

NOW, THEREFORE, the City Council of the City of Santee does ordain, as follows:

SECTION 1: Findings in support of local amendments. To the extent that the following changes and modifications to the 2019 California Building Standards Code are deemed more restrictive, thus requiring that findings be made pertaining to local conditions to justify such modifications, the City Council hereby finds and determines that the following changes and modifications are reasonably necessary due to local climatic, topographical, and geological conditions consisting of the following:

A. Climatic Conditions:

1. The City of Santee is located in a semi-arid Mediterranean type climate. It annually experiences extended periods of high temperatures with little or no precipitation. The winds prevail from the west with seasonal strong dry east winds that vary in duration and intensity. These winds can significantly enlarge wildland fires as well as cause abrupt and unpredictable changes in fire direction. Temperatures ranging between 75- and 100-degrees F are common throughout the year. Hot, dry foehn (Santa Ana) winds, which may reach speeds of 45 miles per hour or greater, are also common to the area. These climatic conditions cause extreme drying of vegetation and common building materials. Frequent

periods of drought and low humidity add to the fire danger.

2. The local climate alternates between extended periods of drought and brief flooding conditions. Flood conditions may affect the Santee Fire Department's ability to respond to a fire or emergency condition. Floods also disrupt utility services to buildings and facilities within the County.

3. Dry climatic conditions and winds can contribute to the rapid spread of fires. Fires spread very quickly and create a need for increased levels of fire protection. The added protection of fire sprinkler systems and other fire protection features will supplement normal Fire Department response by providing immediate protection for the building occupants and by containing and controlling the fire spread to the area of origin. Fire sprinkler systems will also reduce the use of water for firefighting by as much as 50 to 75 percent.

4. The water supply is limited making it necessary for fire apparatus to travel time-consuming distances to refill once their initial water supply has been utilized.

B. Topographical Conditions:

1. The City is situated in hilly, inland terrain. Approximately 50% of the area is classified as "wildland" for fire purposes, covered by native vegetation on steep and frequently inaccessible hillsides. The native ground cover is highly combustible grasses, dense brush and chaparral. Natural firebreaks in these areas are insignificant. Natural slopes of 15 percent or greater generally occur in the foothills of Santee. Several developments are currently planned for these hillsides and future development may potentially occur in such areas.

2. The topographical conditions combine to create a situation that places Fire Department response time to fire occurrences at risk and makes it necessary to provide automatic on-site fire-extinguishing systems and other protection measures, such as Class B roofing material to protect occupants and property.

3. The amount of traffic will continue to grow with regional population growth, creating an artificial obstructive topographical condition. The three major highways (Hwy. 67, Hwy. 125, and Hwy. 52) that traverse through the City support the transportation of hazardous materials. The eventual release or threatened release of hazardous materials along one of these highways is possible, given the volume transported daily. The City is also transected by a mass transit trolley line that begins in the City of San Diego and terminates in the City of Santee. The Trolley operates throughout the day and delays emergency vehicles on a daily basis. These conditions may negatively affect access and the Fire Department's ability to deliver service.

4. The potential for fire damage is great in the wildland area, as such, a fire can spread rapidly and difficult terrain and explosive vegetation can slow response time.

5. Rural roads include many narrow winding roadways, often with grades in excess of that

From:	Chris Jacobs
To:	Marni Borg
Subject:	FW: Fanita Ranch FREIR - PWS Exhibit 11-13
Date:	Monday, July 25, 2022 5:09:24 PM
Attachments:	PWS Exhibits 11-13 Fanita FREIR July 2022.pdf

From: Save Fanita <savefanita@gmail.com>
Sent: Sunday, July 24, 2022 4:06 PM
To: Chris Jacobs <CJacobs@CityofSanteeCa.gov>
Subject: Fanita Ranch FREIR - PWS Exhibit 11-13

Public Safety Map Book
Information Sheet

What is the purpose of the Public Safety Grid and San Diego Evacuation Planning Map Book?

- Provides a region-wide common map grid for communicating a geographical area for mass notification and evacuation
- Provides an Evacuation Field Checklist
- Supports situational awareness mapping tools
- Supports the public SDEmergency Map
- Provides mapping tools to support mass notification and evacuation

How was the Public Safety Grid and map book developed?

The Public Safety Grid & Evacuation Planning Map Book were developed through a collaborative process between law enforcement, fire services, emergency managers, communications centers and GIS staff.

Where can I get the mapping tools?

You can view the **Web Mapping Application** here:

http://arcg.is/2dNKch6

You can download the **PDF Printable version** here:
Note: File may take up to several minutes to download on slower connections.

https://bit.ly/3w1lhwO

Who do I contact for support?

The project was developed with support from the Unified Disaster Council of San Diego County.

The County of San Diego Office of Emergency Services has staff assigned to provide support.

For support, please contact: SanMAPS@sdcounty.ca.gov

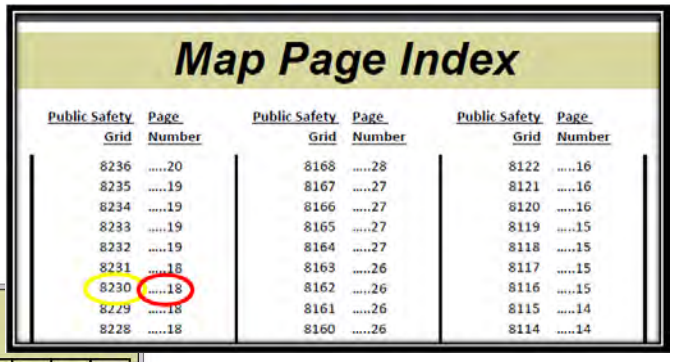
Revised: 5/10/2021

Public Safety Map Book

How To Use The Map Book

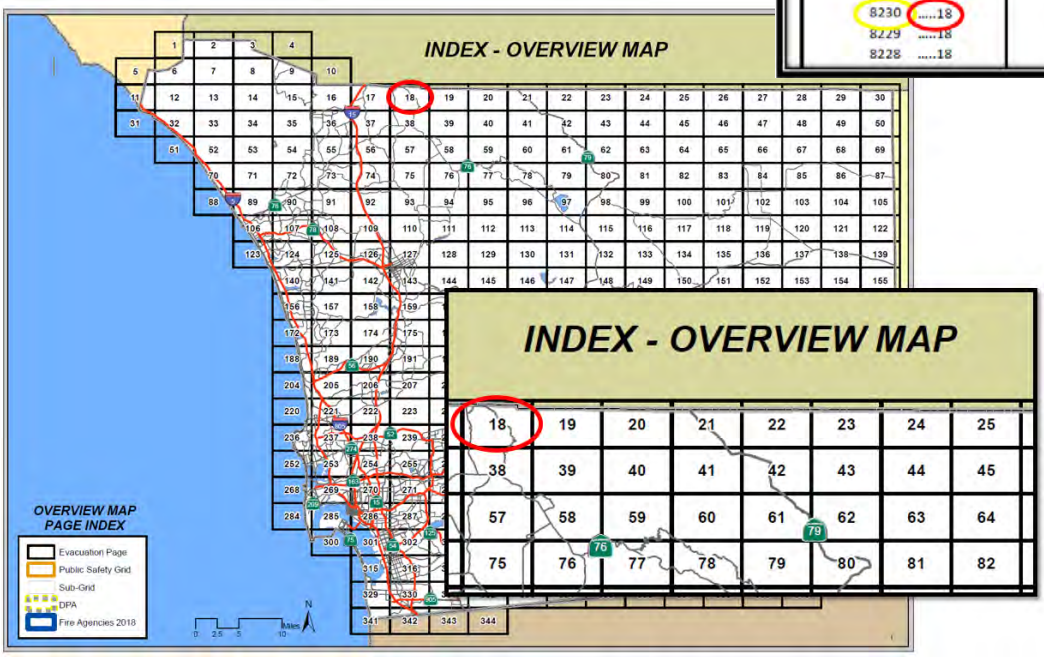
The index - Overview Map identifies the Evacuation Planning Map Book Page Number (circled in red) for each geographical area of San Diego County.

The Map Page Index identifies the Evacuation Planning Map Book Page Number (circled in red) for each Public Safety Grid Number (circled in yellow).

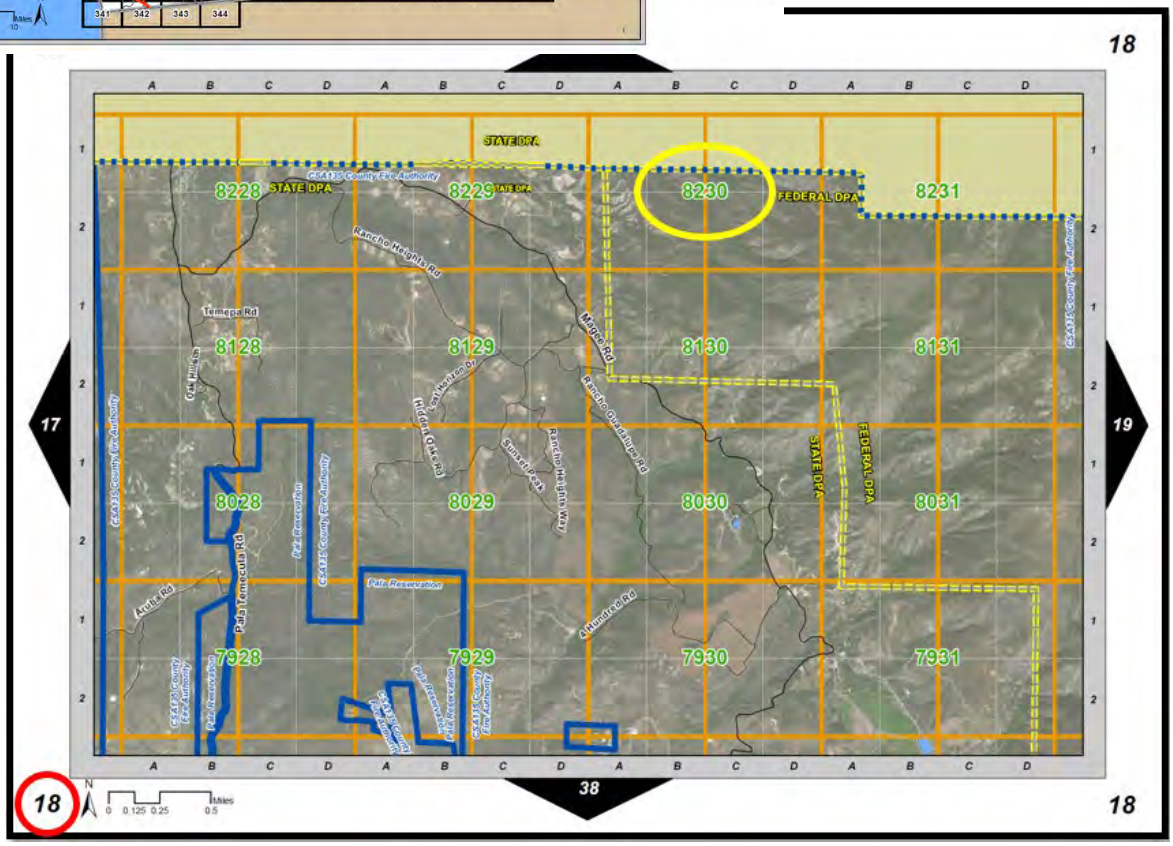


Map Page Index

Public Safety Grid	Page Number	Public Safety Grid	Page Number	Public Safety Grid	Page Number
8236	20	8168	28	8122	16
8235	19	8167	27	8121	16
8234	19	8166	27	8120	16
8233	19	8165	27	8119	15
8232	19	8164	27	8118	15
8231	18	8163	26	8117	15
8230	18	8162	26	8116	15
8229	18	8161	26	8115	14
8228	18	8160	26	8114	14



Law Enforcement utilizes sub-grids A1 through D2. The sub-grid reference numbers are within the gray frame on each Evacuation Planning Map Book page.



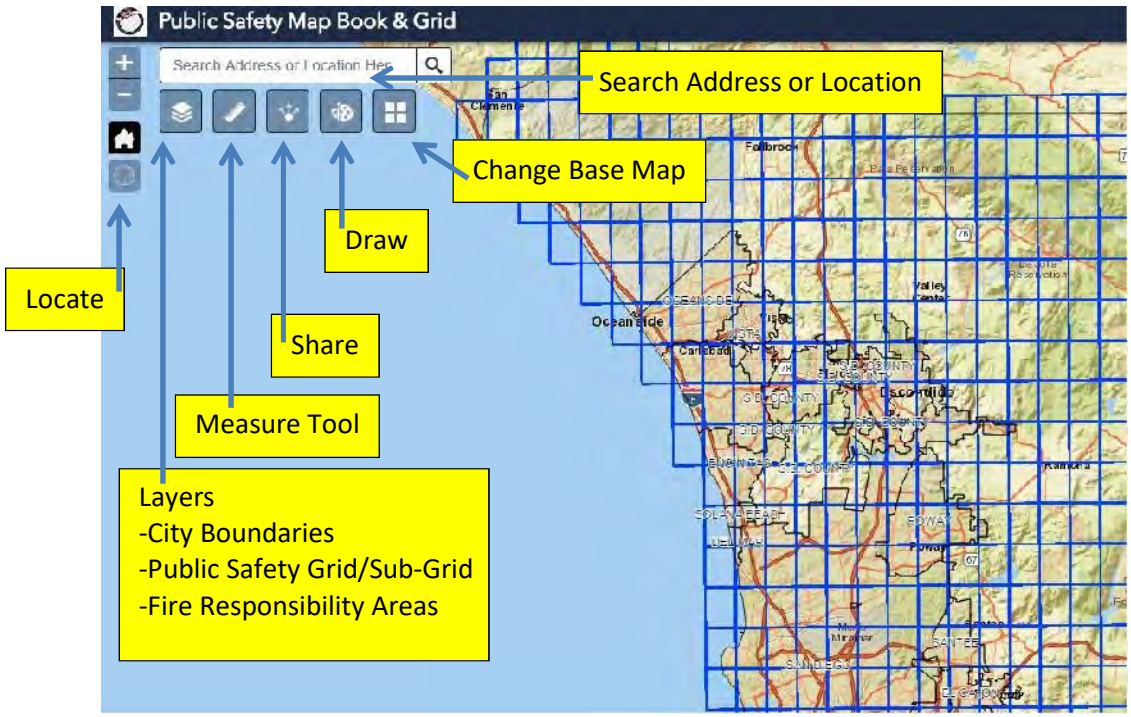
Fire Department utilizes a simplified sub-grid where "A" = A1 through B2 and "C" = C1 through D2.

Monte Vista Interagency Command Center provides the Public Safety Grid Number for all emergency incidents. Example = "Map Location 8030C".

Public Safety Map Book

Web Map Application Instructions

1. Open the web map application http://arcg.is/2dCxhOI
2. Zoom in to display the map grid and sub grids. The grid visibility is based on zoom level.
3. Other Features:



I. LEVELS OF COMMAND

- **Agency Representative –** An incident whereby Law Enforcement is assisting the Fire Department with operations which does not require unified command roles, responsibility, or authority. In this instance, the Law Enforcement representative will respond to the Incident Command Post (ICP) and interface with the Fire Department Incident Commander and attend all cooperator meetings, planning meetings, and operational briefings.

- **Unified Command –** An incident whereby Law Enforcement has jurisdictional responsibilities within the Incident. In this instance the Law Enforcement Sergeant or above will respond to the Incident Command Post (ICP) and become the Unified Law Enforcement Incident Commander. It is imperative this person remain at the ICP and stay in constant contact with the Fire Department Unified Incident Commander. All Unified Incident Commanders will be authorized to make command level decisions and expend funds on behalf of their Department.

II. EVACUATIONS

This document will assist Law Enforcement and Fire Department personnel in the implementation of an evacuation plan. It is designed to provide coordination and collaboration to improve efficiency in accomplishing all identified incident objectives.

Evacuation Definitions:

- **Evacuation Order** – Movement of community members out of an affected area due to an immediate threat to life and property from an emergency incident.

- **Evacuation Warning** – Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An evacuation may be ordered as a result of the threat. Threat is usually in excess of 2 hours.

- **Shelter in Place** – Directing community members to stay secured inside their current location. Only used if the safety of the citizens can be assured if they remain; or if evacuation will cause a higher potential for loss of life.

Road Closure Definitions:

- **Hard Closure** - Closed to all traffic except Fire and Law Enforcement.

- **Soft Closure** - Closed to all traffic except Fire, Law Enforcement, and critical incident resources (i.e. utility companies, CALtrans, Public Works, etc.).

- **Resident Only Closure** – Soft closure with the additional allowance of residents and local government agencies assisting with response and recovery.

Note: Media is allowed access under all closure levels unless prohibited under PC 409.5

Evacuation Checklist

This checklist is intended to assist field supervisors in the initial stages of a fire or other emergency requiring evacuations where the Fire Department is the authority having jurisdiction. These guidelines are flexible and can be modified to address specific field situations:

FIRE

- ☐ Assume command of the incident
- ☐ Conduct a situation assessment and evaluate need for evacuations
- ☐ Establish an Incident Command Post (ICP) with sufficient room for representatives from other assisting agencies and announce its location
- ☐ Request Agency Representative from Law Enforcement to respond to the ICP

LAW ENFORCEMENT

- ☐ Respond with supervisor of the rank of Sergeant or above to the ICP, request for another Deputy to be located with Operations Section Chief
- ☐ Maintain ingress and egress routes for emergency vehicles
- ☐ Establish perimeter control, keep unauthorized vehicles and pedestrians out of involved area
- ☐ Conduct evacuations if required at the direction of the Incident Commander
- ☐ Notify the Incident Commander of any evacuations which may have taken place prior to their arrival
- ☐ Establish anti-looting security patrols for evacuated areas within the perimeter when safe to do so
- ☐ Identify temporary evacuation points and shelters for citizens and animals
- ☐ Maintain a Unit log

JOINT FIRE AND LAW RESPONSIBILITIES

- ☐ Evaluate and determine whether Law Enforcement role will be as Agency Representative or Unified Incident Commander, based on the scope of the Incident
- ☐ Assign a Law Enforcement supervisor to work closely with Operations Section Chief or Incident Commander, whomever is determining areas to be evacuated
- ☐ Assess and validate the need for an Evacuation Warning, Evacuation Order, and/or Shelter In Place as determined by location, potential size, and direction of incident travel or spread

- ☐ Unified Incident Commanders determine potential for incident spread and request appropriate resources to complete evacuation and mitigate incident concurrently:
  - Identify areas that must be immediately evacuated and label "evacuation order" areas
  - Identify areas that should be notified of the likelihood of evacuations within a two hour time frame and label "evacuation warning" areas
- ☐ Identify traffic control points and levels of closure
- ☐ Determine and disseminate evacuation routes
- ☐ Complete initial Evacuation Plan utilizing San Diego County Public Safety Grid pages as a common map reference
- ☐ Advise the appropriate Law Enforcement Communications Center utilizing the Public Safety Map Grids for notification of Evacuation Warnings and Evacuation Orders via the Alert San Diego regional notification system
- ☐ Coordinate closely with Command and General Staff managing the incident

This checklist will assist Law Enforcement and Fire Department personnel in the implementation of an Immediate Evacuation Area. It is designed to provide coordination and improve effectiveness in the initial attack phase of an incident.

Immediate Need Evacuation Guidelines

- ☐ Identify the need for an immediate evacuation area.
- ☐ Determine potential for incident spread and request appropriate resources to complete evacuation and mitigate incident concurrently. (Include Law Enforcement AHJ)
- ☐ Establish an Incident Command Post (ICP); co-locate law enforcement at ICP.
- ☐ Identify evacuation area utilizing Thomas Brothers Map or other appropriate map reference (provide map page reference and grid.) Include area of incident potential when determining evacuation area.
- ☐ Identify traffic control points for entry and exit of resources and civilians.
- ☐ Identify areas that must be immediately evacuated and label “evacuation order” areas.
- ☐ Identify areas that are potentially threatened and label “evacuation warning” area.
- ☐ Identify “safe refuge” areas inside evacuation areas.
- ☐ Determine and publish evacuation routes.
- ☐ Divide incident into appropriate divisions of labor and develop incident organization.

CONSIDERATIONS – *(as time allows)*

- ☐ Requesting Liaison function for Public Notification Systems. (Local OES)
  - *Emergency Alert System
  - *Commercial phone/paging/email notification systems (Reverse 911)
  - *Warning Sirens
- ☐ Identify and clearly communicate the Decision Points for implementing additional evacuation areas. Evaluate the evacuation and expand or contract the plan as necessary.
- ☐ Identify areas of Special Needs Population and large animals.

EVACUATION AND REPOPULATION PLAN

Rev 1 (01/12)

This packet will assist emergency response personnel in the implementation of an evacuation and repopulation plan.

Evacuation Plan Instructions (Blocks 1-12):

Block 1. Fill in the incident name, incident number, name of preparer, and date and time prepared.

Block 2. Fill in affected area(s). Be specific and include community names, streets, or map page grids. Include type of protective action for each area: (Immediate) Evacuation Order, Evacuation Warning, Closures, Shelter in Place, or use of Safe Refuge Areas. Use each numbered line for a separate area. See 'Definitions' for assistance.

Block 3. List decision points to initiate protective actions for each area noted above. Each numbered line corresponds with a numbered affected area listed above.

Block 4. Enter the predicted time that the incident, situation, hazard, or fire will take once it arrives at a decision point, and until it reaches an affected area.

Block 5. Obtain Incident Commander's signature, agency identifier, and date of signature.

Block 6. Obtain signature of law enforcement or Operations Section personnel in charge of implementing the plan.

Note: The first page of the plan can be used to document an immediate need evacuation. As time allows, continue filling out the following pages for planned evacuations.

Block 7. List traffic control points that agencies will use to block or limit access to the incident or area. The locations of traffic control points (TCPs) are usually determined by law enforcement. List the level of closure associated with each traffic control point. The level of closure is generally determined by the Incident Commander with input from the Operations Section and Safety Officer. The level of closure may be adjusted within minutes depending on the incident's activity. A information sheet on the TCP with level of closure should be provided to staff manning the TCP. A map should be made identifying traffic control points and evacuation areas.

Block 8. List the methods that the law enforcement agency having jurisdiction will use to notify the public of protective actions being implemented in an area.

Block 9. List evacuation routes for the public to exit an affected area. Evacuation routes should be added to an incident travel map if possible.

Block 10. List travel routes for emergency responders into the incident or evacuation area. Travel routes to be used by emergency vehicles should be added to an incident travel map if possible.

Block 11. List public shelters open for the incident. Provide an address for the shelter and contact information that can be provided to the media, elected officials, and the public.

Block 12. List animal shelters for large animals and household pets. Provide an address for the shelter and contact information that can be provided to the media, elected officials, and the public.

Note: This is the last step of the Evacuation Plan. The Repopulation Plan begins below.

Repopulation Plan Instructions Blocks 13-17):

Block 13. Fill in the incident name, incident number, and the date/time the plan should be initiated. This is the first step of the Incident Repopulation Plan.

Block 14. List areas that are being affected by the Repopulation Plan. For each area, list any closures that will remain in effect once the area is repopulated.

Block 15. Place a check by each safety issue once the item has been mitigated or cleared by the authorizing individual as well as the date and time it was authorized.

Block 16. Distribute the plan as detailed. Place a check for each position as the plan is distributed.

Block 17. Add the name of the preparer and have the Incident Commander date and sign the plan.

Repopulation criteria shall take into account emergency worker safety and the community needs.

Control of repopulation to an evacuated area shall be accomplished during planning meetings with command and general staff, and coordinated with media releases and incident action plan instructions. Local residents may be allowed to repopulate with escorts or while mop-up operations and infrastructure repair continue if the situation allows.

Coordination with assisting and cooperating agencies is critical to the success of repopulation planning. Ultimately it is a law enforcement decision based on fire department input to approve repopulation of citizens back into an area previously closed or evacuated.

Definitions

Evacuation Order-Movement of community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

Evacuation Warning-Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away.

Levels of Closure-A closure prohibits the usage or occupancy of a defined area such as a park, beach, or road due to a potential or actual threat to public health and/or safety. Media is allowed under all closure levels unless prohibited under PC 409.5

Level 1 Closure-Closed to all traffic except local residents; may require escorts.

Level 2 Closure-Closed to all traffic except FD, LE, and critical incident resources (i.e. utility companies, Caltrans, County Roads, etc.).

Level 3 Closure-Closed to all traffic except FD and LE.

Level 4 Closure-Closed to all traffic including FD and LE.

Shelter in Place-Directing community members to stay secured inside their current location. Used if evacuation will cause higher potential of loss of life.

Safe Refuge Area-A temporary location to hold evacuees until safe evacuation is possible.

Safe Points-Temporary area outside of affected area to stage evacuees until emergency is over or a shelter can be opened.

EVACUATION PLAN (Blocks 1-12)			
Block 1	**Incident Name:**		**Incident #:**
Prepared by:		**Date:**	**Time:**

Block 2	**Affected Area(s) & Type** ***Evacuation Order, Warning, Shelter in Place, Closure, Safe Refuge Area***
1.	
2.	
3.	
4.	
5.	

Block 3	**Decision Points to Initiate Above Actions**	**Block 4**	**Predicted Time to Reach Affected Area**
1.			Hour(s)
2.			Hour(s)
3.			Hour(s)
4.			Hour(s)
5.			Hour(s)

Block 5	**Incident Commander(s)**
Name & Signature Agency:	Date:
Name & Signature Agency:	Date:
Name & Signature Agency:	Date:
Name & Signature Agency:	Date:

Block 6	**Law Enforcement or Operations Sec. Chief**
Name & Signature Agency:	Date:

Block 7	Traffic Control Points	Levels of Closure for Area
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Closure Levels:

Level 1: Closed to all traffic except local residents; may require escorts.
Level 2: Closed to all traffic except FD, LE, and other critical incident resources (i.e. utility companies, Caltrans, County Roads etc.)
Level 3: Closed to all traffic except FD and LE
Level 4: Closed to all traffic including FD and LE

- *Traffic control points must cover all sides of the incident and be should be located outside the Evacuation Warning area. Traffic control points should be identified as TCP on the incident maps and closure levels identified for each point. (Example: TCP 4 refers to Traffic Control Point- Level 4 closure). Points should also be displayed on evacuation maps.*
- *Provide a Traffic Control Info Sheet to TCP staff is possible.*
- *Media is allowed access under all closure levels unless prohibited by Penal Code Section 409.5*

Block 8	Process for Initial Notification of Public & Time Initiated *(Phone, EAS, Sirens, Door-to-Door) By Who, Date and Time Initiated*
1.	
2.	
3.	
4.	

Block 9	**Evacuation Routes for Public** **(Exiting area)**
1.	
2.	
3.	
4.	
5.	
6.	

Block 10	**Travel Routes for Emergency Responders** **(Entering Area)**
1.	
2.	
3.	
4.	
5.	
6.	

Routes shall be coordinated with IC, Ops & Logs Sec. Chiefs. Routes for Evacuation Order areas should be determined first.
Display evacuation routes on incident maps and ensure EOC(s) are informed if activated.
Consider transportation and barricade needs early.

Block 11	**Public Shelters or Safe Points** **Name, Address, and Contact Information**
1.	
2.	
3.	
4.	
5.	

ICP (or EOC as applicable) should identify approximate number of evacuees, anticipated duration of incident, and direction emergency may head, to assist Red Cross is choosing a safe shelter location.
Public shelters should be staffed with Incident Information Officers.
Display public shelters on incident maps with a red cross.

Block 12	Large Animal/Pet Shelters- Name, Address, and Contact Information
1.	
2.	
3.	
4.	

Animal/pet shelter locations must be coordinated between LE and Animal Control.

ICP or (EOC as applicable) should identify approximate number/type of pets and anticipated duration of incident.

Definitions

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Evacuation Warning-Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away or as deemed appropriate by the IC.

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Level 4 Closure-Closed to all traffic including FD and LE.

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Safe Refuge Area-A temporary location to hold evacuees until safe evacuation is possible.

Safe Points-Temporary area outside of affected area to stage evacuees until emergency is over or a shelter can be opened.

REPOPULATION PLAN (Blocks 13-17)

Block 13	**Incident Name:**	**Incident #:**
Date to be initiated:		**Time to be initiated:**

Block 14	**Repopulation Area(s)**	**Level of Closure (No closure, or 1-4)**
1.		
2.		
3.		
4.		

Block 15	**Repopulation Checklist**	**Authorizing Name-Date-Time**
☐	Fire or emergency threat mitigated	
☐	Utilities secured ☐ Gas ☐ Electric ☐ Telephone ☐ Water	
☐	Infrastructure hazards mitigated (roads, bridges, etc) ☐ Public Works ☐ Caltrans	
☐	Law Enforcement approval ☐ Sheriff ☐ Local PD ☐ CHP	
☐	Other	
☐	Other	
☐	Incident Commander Approval	
☐	Fire Agencies notified ☐ CAL FIRE ☐ USFS ☐ Fire District/Department	
☐	American Red Cross Notified	
☐	Emergency Operations Center(s) notified	
☐	Incident Information Officer notified	
☐	Incident Liaison Officer notified	
☐	ICS 209 updated	

Block 16	**Evacuation Plan Distribution**

☐ Incident Commander(s)	☐ Operations Section Chief(s)
☐ Planning Section Chief	☐ Logistics Section Chief
☐ Finance Section Chief	☐ Public Information Officer
☐ Liaison Officer	☐ Incident Safety Officer
☐ Law Enforcement	☐ Public Officials (Mayor/City Manager)
☐ Caltrans/Local Streets Dept	☐ Emergency Operations Center(s)
☐ County OES	☐ CAL EMA
☐ California Highway Patrol	☐

Block 17	**Prepared by:**	**Date:**
Incident Commander:		Time:
Incident Commander:		Time:

Definitions

Evacuation Order-Movement of community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

Evacuation Warning-Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away or as deemed appropriate by IC.

Levels of Closure-A closure prohibits the usage or occupancy of a defined area such as a park, beach, or road due to a potential or actual threat to public health and/or safety. Media is allowed under all closure levels unless prohibited under PC 409.5

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Level 4 Closure-Closed to all traffic including FD and LE.

Shelter in Place-Directing community members to stay secured inside their current location. Used if evacuation will cause higher potential of loss of life.

Safe Refuge Area-A temporary location to hold evacuees until safe evacuation is possible.

Safe Points-Temporary area outside of affected area to stage evacuees until emergency is over or a shelter can be opened.

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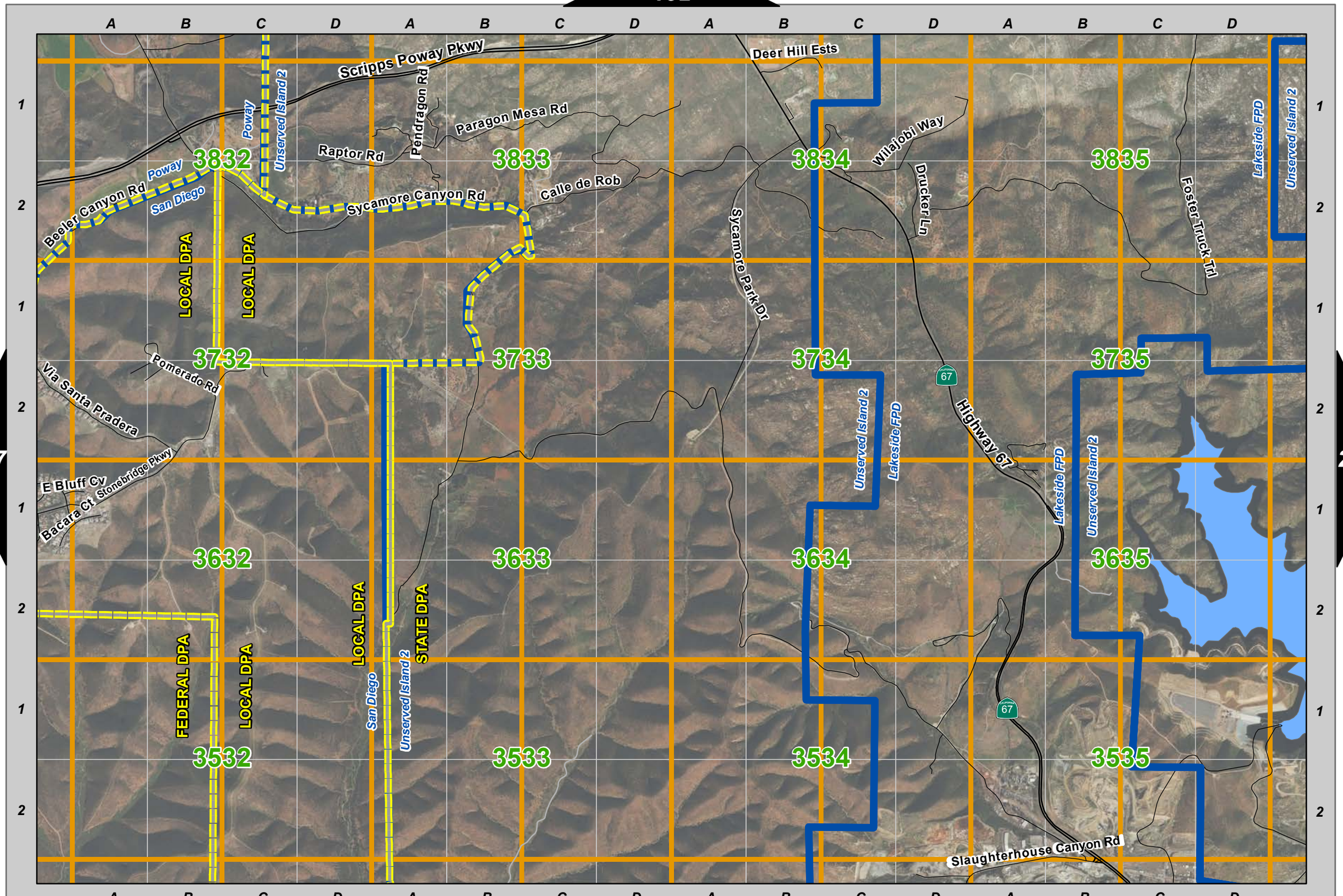

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0 0.125 0.25 0.5 Miles

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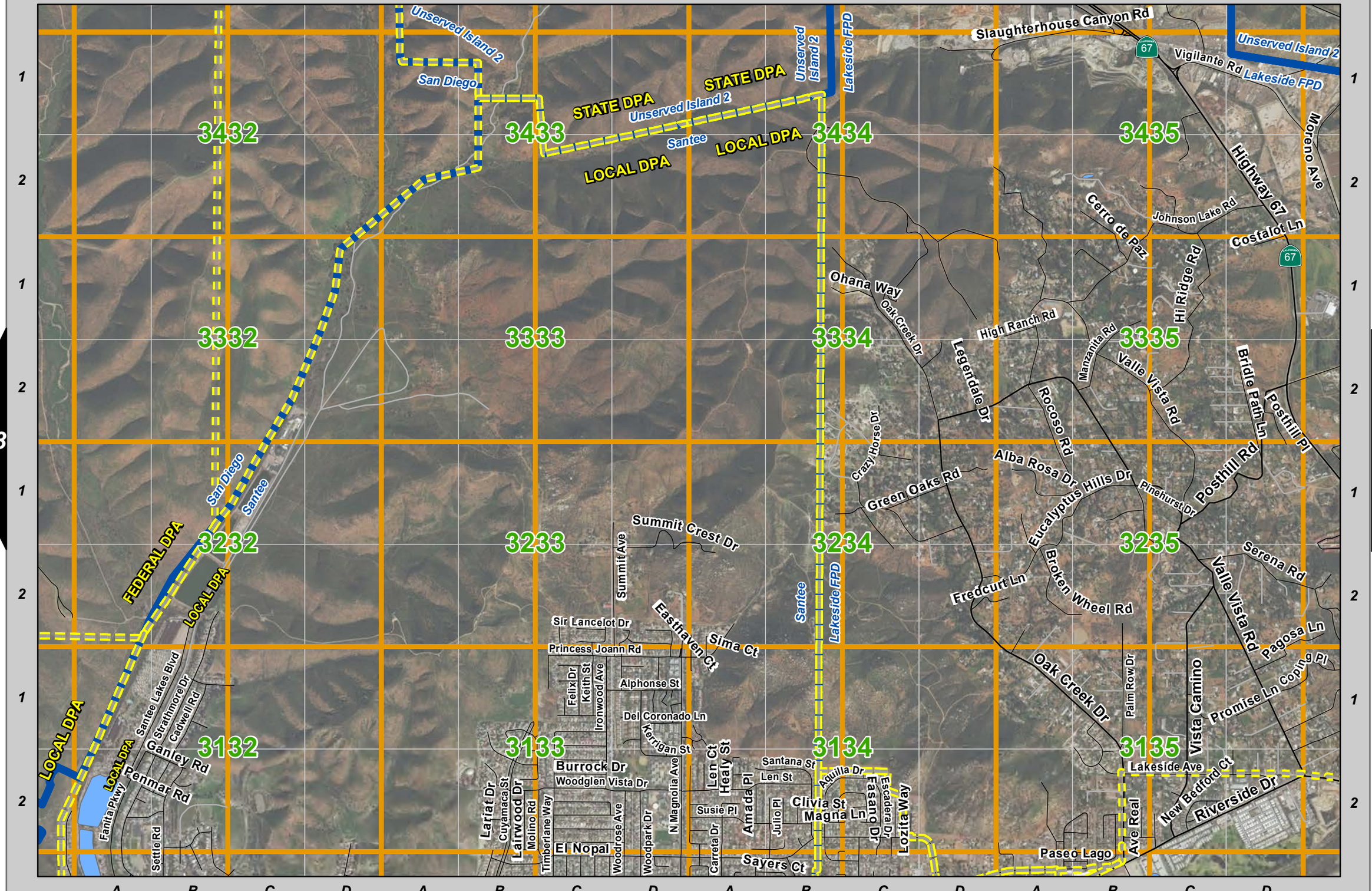

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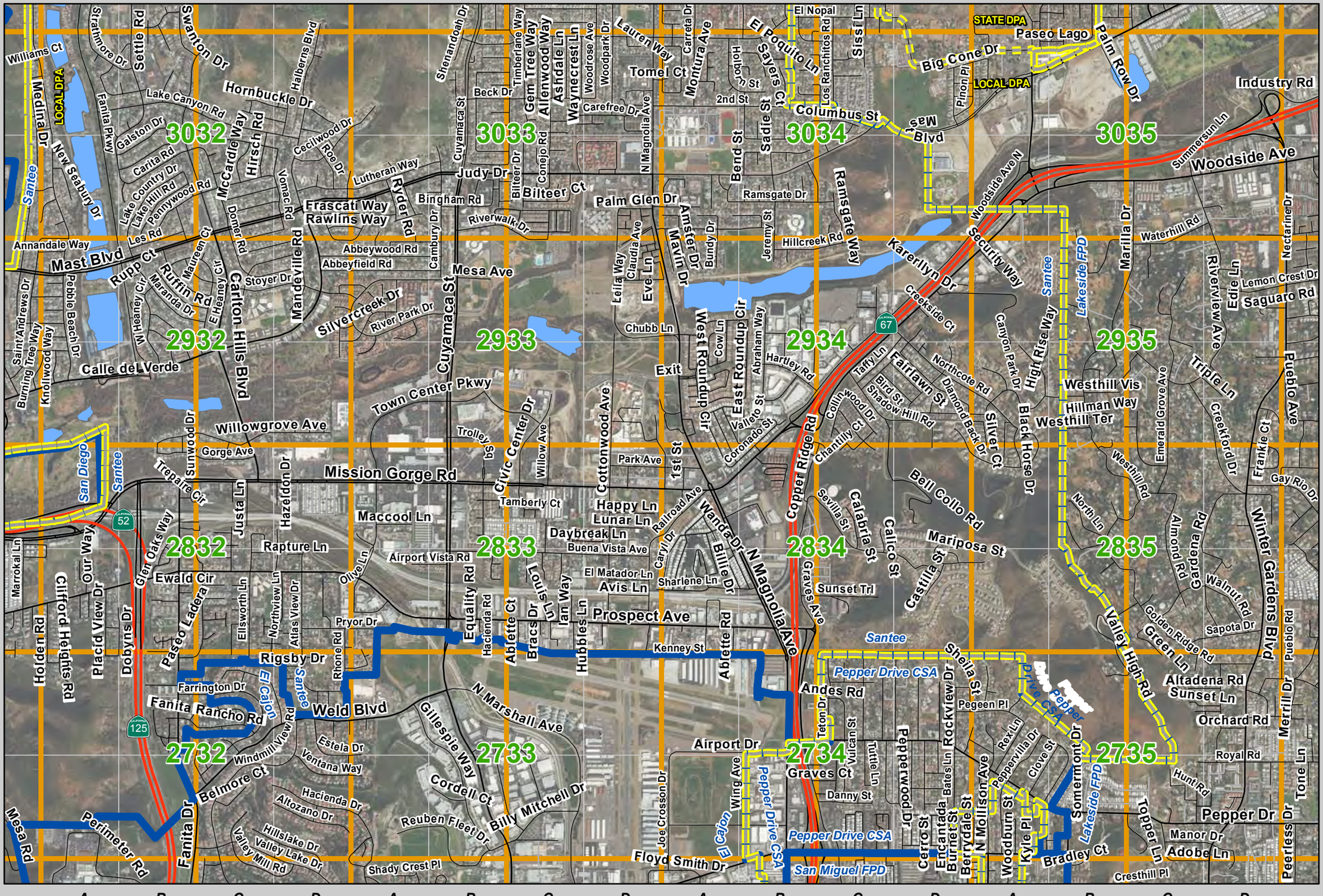


239 241 256

WUI Name: **PALOMAR-SOUTH GRADE**

Location: Palomar Mountain-Reference all 4 Palomar plans for additional information

Public Safety Grids: 6024-6922 **WUI Grid No.:** 42-43 **Thomas Guide Grids:** 1052

SDF20W

Insp'd Date: 9/4/2019
By: Rohde & Assoc.

Risk Assessment | Tactical Plan | Tactical Map | Area Map | Aerial Map | Additional Info

RISK ASSESSMENT MATRIX

PALOMAR-SOUTH GRADE *RISK ASSESSMENT MATRIX*		
SAFETY	*STATIC*	*ATTACK*
FF Safety 1	Fuels 1	Access 1
Civ.Safety 1	Topography 1	Water 1
Air Safety 1	Clearance 1	Comms 1
Hazmat 3	Construct 2	Tac Air 2
Entrapment Risks- 1	Density 3	

SAFETY	FF Safety	FF Safe	No Safety Zones	Marginal Safety Zones	Adequate Safety Zones
	Civilian Safety	Civ Safe	Mandatory Evacuation	Evacuate if Time Permits	Shelter in Place
	Air Safety	Clear	Restrictions, Steep Cyns	30' to 70'	More than 70'
	HazMat	HazMat	Bulk LPG, Chemicals	Hazards in Barn	None
STATIC	Fuels	Fuels	Heavy or Dead Trees, Brush	Moderate	Light
	Topography	Topog	Steep	Medium Slope	Flat
	Clearance	Clear	30' or Less	30' to 70'	More than 70'
	Construction	Const	Abundant Combustable	Some Combustable	Non-Combustable
	Structural Spacing	Density	Dense Spacing	Subdivision Tracts	Rural, dispersed
ATTACK	Access	Access	Narrow, Dirt Rds No turnarounds	1 Ln, paved, 1-way in/out	2-Lane Rds. Good Ingress/ Egress
	Water	Water	No Water Source	Ponds, pools, low flow hyds	Good Hydrants
	Communications	Comm	Poor Radio, Cell Coverage	Some Weak Spots	Good Coverage
	Tac Air Support	Tac Air	20+ Min Re-load, No LZs	10-15 Min Re-load, No LZs	5 Min re-load, LZs

CRITICAL INFORMATION

Response Safety
Only two safe routes on and off of Palomar Mt; South Grade Rd (S6) and East Grade Rd (S7). Both can be compromised by an oncoming fire front, South Grade by a fire from the southwest and East Grade from an east wind driven fire. Evacuate very early choosing a route away from the approaching fire. Communication is spotty on CAL FIRE VHF (Use MVU 2, Tone 1,4 & 7). CNF is better (Tones 4 High Point, 8 Boucher & 11) with NIFC Tacs. 800 MHz is good. Don't rely on cell service.

Aviation Hazards
No major transmission lines run through this plan area. Mostly small distribution lines along the residential access roads throughout the community. Some new tall metal poles have been placed along Hwy 76. Watch for small antenna at the County Maintenance Yard at the intersection of State Park Rd (S7) and Fern Meadow Rd and large antenna near the landing zone area off of Crestline Rd across from the Palomar Mountain Lodge. Paragliders off Nate Harrison Grade.

Potential Choke Points/Entrapments All roads in this area have major entrapment potential. Do not allow engines or civilians on Nate Harrison Rd or Palomar Divide Rd with threat of fire nearby. Only Type 6 engines in these areas. All areas off Doane Valley Rd and Boucher Lookout Rd have potential entrapment threat. Potential entrapments from fires moving upslope in chimneys impacting State Park Rd (S7) and South Grade Rd. Very limited access for Type 1 engines.

BRIEFING INFORMATION

Fuels	Heavy, contiguous, old chaparral (many areas without fire history) leading into heavily wooded areas of fir, cedar and pines. Potential for heavy ladder fuels to ignite the canopy of trees surrounding structures resulting in a crown fire.
Last Year(s) Burned	2007 Poomacha Fire: 35,000 acres, 1987 Palomar Fire: 15,581 ac. 2015 Cutca Fire: 167 acres, Many areas in this plan have no fire history.
Expected Fire Behavior	East wind driven fires crossing over Canfield Rd may exhibit extreme fire behavior with high rates of spread, long range spotting and high energy outputs. Structure loss is likely in the heavy fuels surrounding the structures off of Doane Valley Rd. Fires approaching from the southwest may have higher than normal rates of spread and long range spotting due to the strong onshore winds that often occur around 1600 hours. Watch for the potential of torching in the standing dead trees that may increase spotting distances and crowning. History of major uphill fire runs from large offshore wind driven fires as onshore winds return. Watch for the potential of a plume driven fire in heavy fuels.
Topography	Very steep slopes surround the entire perimeter of this plan area, especially on the south and west sides. Steep slopes to the southwest will cause predominate onshore winds to funnel directly into the State Park Rd (S7) area. To the southwest, elevations rise quickly from around 1000' in Rincon to 5438' at Boucher Lookout. Elevation from the East is more gradual into this area.
Access	Very limited access. South Grade Rd to Hwy 76 can be closed from fire moving up from the Rincon area. East Grade Rd may be closed during east wind driven fires passing west of Hwy 79. Access to Palomar Outdoor School and Palomar Christen Conference Center via State Park Rd to Doane Valley Rd can be very hazardous.
Special Hazards	No vehicles over 23' on South Grade Rd. Bad radio reception areas. Indefensible structures in the Christian Center (34764 Doane Valley Rd: 760-742-3400), Outdoor School on Doane Valley Rd (14592 State Park Rd 760-742-2126) and Harrison Serenity Ranch (18187 Hate Harrison Rd: (619-884-9431). CDPR Doane Valley campground (31 sites) & CDPR Cedar Grove Campground (3 group sites)

Safety Zones/ Temporary Safe Refuge Areas

Type	Location	Limits of Use
SZ	Palomar Outdoor School-Doane Pond 14592 State Park Rd-Attendance: 100-200	If school is in attendance have 1 strike team to shelter-in-place
TRA	Palomar Christian Conference Center 34764 Doane Valley Rd-Attendance varies	If Conference Center occupied, 1 strike team to shelter-in-place
SZ	State Park Rd (S7) and Canfield Rd (S6) Large paved area across S7 from store	Summit LZ: 2-3 Strike Teams Gate combo: 2255
TRA	Boucher Lookout and Comm towers at the end of Boucher Lookout Rd	1-2 Strike Teams. Position away from oncoming fire front
TRA	County Maintenance Yard at intersection of State Park Rd (S7) & Fern Meadow Rd	Expand with the large clearing at Bailey Meadows Rd & (S7)

Water Supply	Contact Water Dist. to utillize blue (private) risers. Some 10,000 gal gravity fed tanks (marked by blue address signs). 1M gallon water tank at Observatory via two hydrants (at tank and lower parking lot). 60K tank at Christian Conf. Ctr. with hydrants. Copter dip at Doane Pond, Lake Henshaw or Mendenhall Valley

UNIFIED COMMAND

Potential Incident Command Post Location	Initial: USFS CNF Palomar Fire Station, 35604 Canfield Rd or Fire Sta. 79, 21610 Crestline Rd., USFS CNF FS32, Lake Henshaw Major Fire: Palomar Observatory 35899 Canfield Rd (S6) or Harrah's Casino 777 S Resort Dr, Valley Ctr
Unified Command Participants	USFS (DPA), CAL FIRE, SDSO, CHP, CDPR (CA State Parks), SDG&E
Staging Areas	1. Kica Mik Overlook on East Grade Rd (S7)-if safe 2. U.S. Post Office, 33124 Canfield Rd, Palomar Mountain 3. Lake Henshaw Vista View Lookout on East Grade Rd (S7) 4. Lake Henshaw Resort, 26439 Hwy 76, Santa Ysabel 5. Harrah's Casino, 777 S Resort Dr, Valley Center 6. Casino Pauma, Pauma Casino Rd, Pauma Valley

LARGE FIRE DEVELOPMENT FACTORS

Weather	
Temperature	>85 degrees F.
Relative Humidity	<15%
Wind Speed	Avg. 25-35 MPH Gusts 50+ MPH
Fuel Moisture	Seasonal or long term drought with standing dead trees
Fire Behavior	
Rate of Spread	8,580-16,200 feet/hr
Spotting	1.25 miles
Flame Length	Avg. 8-12 ft. Peak 45+ ft.

* Peak flame lengths occur when fire growth is in alignment with heavy fuel, slope and wind.

WUI ARRANGEMENT

Interface:	N	Intermix:	Y	Urban:	N
Suburban:	N	Rural:	Y	Other:	N

N / W / E / S

WUI Name: **PALOMAR-SOUTH GRADE**

Location: Palomar Mountain-Reference all 4 Palomar plans for additional information

Public Safety Grids: 6024-6922 **WUI Grid No.:** 42-43 **Thomas Guide Grids:** 1052

SDF20W

Insp'd Date: 9/4/2019
By: Rohde & Assoc.

Risk Assessment | Tactical Plan | Tactical Map | Area Map | Aerial Map | Additional Info

RECOMMENDED STRATEGIES & TACTICS (FIRESCOPE/PACE)

Primary Plan (Offensive)
Aggressive, but safe, offensive attack on flanks with ground crews (if possible) dozers and aircraft, slowing fire at ridges or fuel breaks. Keep fire out of trees surrounding structures and protect lives and structures on Doane Valley Rd. If Santa Ana wind driven fire is approaching from the northeast, use dozers (if time allows) and aircraft (VLAT) to strengthen High Point Rd and Canfield Rd to slow fire. For fires approaching from the south or west, use dozers and aircraft along south side of State Park Rd (S7) or Nate Harrison Rd if safe to do so. Protect communication towers and structure at Boucher Lookout. Attempt to hold fire at ridge tops and out of steep drainages. Protect both egress routes (State Park Rd and South Grade Rd-S6). Activate alert system and SDSO for possible evacuation, especially for camps, schools and campgrounds. Start evacuation early.

Alternate Plan (Offensive)
Protect State Park Rd and South Grade Rd as principal evacuation routes. Close access from Hwy 76 to Palomar Mt at East Grade Rd and South Grade Rd. Close entrance to Nate Harrison Rd and Doane Valley Rd at State Park Rd (S6). Use caution sending crews onto Palomar Divide Rd. Switch from an offensive to a defensive strategy early. Prepare for communication tower protection and shelter-in-place at Boucher Lookout, CDPR Campgrounds, Outdoor School and Christian Conference Center if expected to be impacted by fire. Patrol for long range spotting. Use fire-front-following tactics for homes with poor defensible space. No point-protection firing without IC permission. Start evacuation immediately if fire is within the plan area only if egress routes, East Grade Rd (S7) and South Grade Rd (S6) are not threatened by fire front. Defend civilians in Safety Zones.

Contingency Plan (Defensive - Responder Safety)
Have all firefighters and law enforcement stay in close proximity of safety at TRAs and structures with good defensible space. Gather civilians trapped in plan area with you. Escort civilians from area only when safe to do so. Use aircraft and dozers to strengthen safety zones and attempt to protect main egress routes to State Park Rd and South Grade Rd (S6). There is one small TRA on South Grade Rd at mile marker 43.8. Do not attempt to send vehicles to Christian Center or School on Doane Valley Rd or to Serenity Ranch on Nate Harrison Rd. Use fire-front-following in these areas only. Use firing tactics only with IC approval unless immediate life threat is present. Cease evacuation attempts and switch to shelter-in-place. Defend civilians in Safety Zones.

Emergency Plan (Defensive)
Do not attempt to evacuate until fire front has passed. Remove all civilians from planning area only when safe to do so. Prioritize shelter-in-place over fire control and evacuation. Defend cililians in Safety Zones. Order all emergency personnel into safety zones with civilians. Prioritize emergency responder safety before civilian rescue. Beware of development of plume collapse, fire whirls, crowning or other extreme fire behavior that may compromise safety, especially near Outdoor School, Christian Center, campgrounds and Nate Harrison area where civilians are located. Use aircraft to attempt to slow fire front and protect civilians and emergency personnel. Use firing tactics only with IC approval unless immediate life threat is present.

Perimeter Control Plan: Keep Fire: Either North or South of Palomar Divide Rd., West of San Luis Rey, River drainage East of Canfield Rd, South of East Grade/State Park Rd (S7), West of Nate Harrison Rd. Hold fire to Palomar Main Divide fuel break (along east Forest Rd. 9S07), reinforce with retardant and crews and fire out. If not possible to hold fuel break, consider slowing head of fire with retardant and hold escape routes for as long as possible to allow for evacuation. Heavy fuels on mountaintop will require heavy and extended crew and dozer commitment. Tie in line to meadows in Doane, Palomar, or Mendehhall Valley when possible

EVACUATION PLAN

Activate "Alert SD" & Wireless Emergency Alert. Max. pop.(weekends) of 3,000 in 300 homes, campsites, organizational camps, and observatory. Many residents (poip. 800) do not have landlines and may not receive cell phone alerts. Cell coverage is unreliable in this plan area. Use ASTREA copter PA, media and social media to announce evacuation. Notify Observatory (760)742-2100/2106 or (951)526-7380- visitors:1000, Christian Conf.Ctr. (936)520-8832 or (760)742-3400#7-pop.400, Outdoor Sch.(760)765-4109 pop. 50-100, Serenity Rch (619-884-9431)- pop.<20, Notify Forest Service and State Parks to evacuate campsites (pop.1200) & lookouts.. Use East Grade Rd for a fire approaching from the southwest & South Grade Rd. for a Santa Ana wind driven fire. Direct camps to activate contract bus services.for evac. Consider burned off areas as TSRA's. Defend trapped civilians in safety zones/TSRA's. Palomar Observatory parking lot gate code #0911

Evacuation Trigger Point: Evacuate entire Palomar Mountain community for any extended attack fire established within the planning area. Consider closing South Grade Rd for any extended attack fire within a one mile radius of Cal Fire/SDCFA Sta. 79. Initiate immediate evacuation of entire Palomar community (250-300 homes) using South Grade Rd (no vehicles over 23') and consider closing East Grade Rd for any well established Santa Ana wind driven fire that crosses Hwy 79. Evacuate entire Palomar Mountain community using East Grade Rd and strongly consider closing South Grade Rd for any extended attack fire that establishes north of Hwy 76. Deploy public safety to open Observatory Safety Zone gate.

Temp. Evacuation Assembly Points (Human & Animal)
Temporary Evacuation (People and Animals): Lake Henshaw Resort, 26439 Hwy 76, Santa Ysabel
Primary people: Harrah's Casino, 777 S Resort Dr, Valley Center or Casino Pauma, Pauma Casino Rd, Pauma Valley
Primary people & equestrian: Lakeside Rodeo Grounds, 12584 Mapleview St., Lakeside or San Luis Rey Downs, 31474 Golf Club Dr, Bonsall

POPULATION & STRUCTURES AT-RISK

Population	112 ppl
Planning Unit Acreage	6,341 ac
Structures	49

STRUCTURAL TRIAGE

Threatened/ Non-Defensible	75% All homes on Birch Hill Rd, Most homes in Bailey Meadows and many homes on Crestline Rd
Threatened/Defensible	25%
Non-Threatened	0%
W/ Defensible Space	15%

EMERGENCY RESOURCE NEEDS - FIRST SIX HOURS
(In addition to Initial Attack Resource)

Fire Ordering Point: USFS CNF (619) 557-5262

Law Enforcement Ordering Point: SDCo. Sheriff (858) 565-5030; State Parks Dispatch (951) 943-1582 or 443-2969

Engines: The number range reflects the number of "minimum" to "preferred" resources.

Type 3 Strike Teams: 8-10	**Type 6 Strike Teams:** 2-3	**Water Tenders:** 6-8
Crews Single: 10 STs: 0	**Dozers** Single: 6-8 STs: 0	**Overhead:** 5 Div. Sup.: 4

Law Enforcement: Both SDSO and CHP may not be readily available in this area. Request SDSO Officers from both east and west side of San Diego County Dispatch area, as well as Riverside SO. Request 25 SDCoSO deputies and 10 CHP Officers, but be prepared to receive much less. Assign CHP to traffic management, Sheriff to evacuation. Request Lt or Capt from both agencies to report to the ICP. State Park Rangers to evacuate State Park campground and unify in command if threatened.

Aircraft:
Type 1 Helicopter (Large): 1 **Type 3 Helicopter (Light):** 1
Type 2 Helicopter (Med.): 3-4 **Air Tankers:** 4-6 with 1 VLAT

WUI Engine Deployement - High Risk
1 engine/2-4 perimeter structures, 1 engine/isolated structures 2 engines/ multi-family structures

WUI Engine Deployement - Moderate Risk
1 engine/2-4 perimeter structures, 1 engine/isolated structure, 2 engines/multi-family structure

WUI Engine Deployement - Low Risk
1 strike team/2 blocks of perimeter homes

Logistics
Open EOC to support with resources and immediate evacuation need, both human and animal. Ensure notifications to prepare for evacuation or shelter-in-place are made immediately to all facilities under the Primary Evacuation Plan section of any extended attack fire. Consider responder fuel, water, and food needs. Advise USFS for potential FEMA assistance.

Other
Notify SDG&E to assist in traffic management and Red Cross and Animal Control to assist in evacuation. Notice Alert SD for system activation. Notify any entity of using their facility for a potential evacuation shelter or staging areas.Consult with CNF regarding wilderness restrictions if fire threatens Agua Tibia Wilderness and State Park Ranges if fire threatens State Park.

WUI Name: SOUTH GRADE

Location: Palomar Mountain

Public Safety Grids: 7138A, 7636C

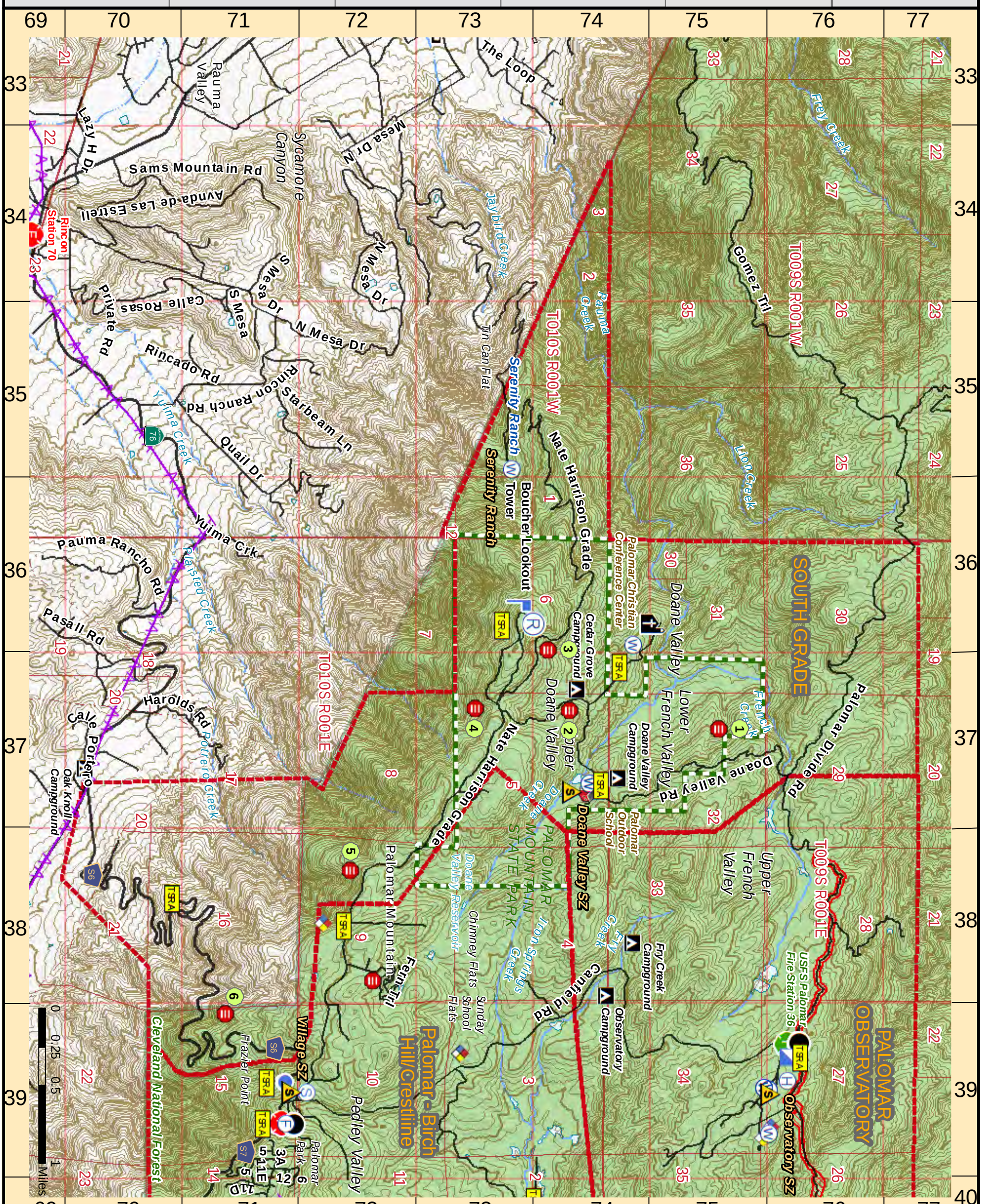
WUI Grid No.: 43

SDF20W

Insp'd Date: 9/4/2019

By: ROHDE AND ASSOC.

Risk Assessment | Tactical Plan | Tactical Map | Area Map | Aerial Map | Additional Info



Fuel Break
Campgrounds
State Parks/Preserves
Cleveland N.F.

CRITICAL INFORMATION:
1. Heavy Fuels, canopy over road
2. Heavy Fuels, canopy over road
3. Heavy Fuels, canopy over road
4. Chimney, close to egress route
5. Chimney, close to egress route
6. Chimney, close to egress route

Safety Zone
Helispot
Water Source
Drop Point
Aerial Hazard
Repeater
Fire Station
Hazmat
Helibase
Incident Command Post
Life Safety Hazard
Lookout
Staging Area
Temp. Safe Refuge
Fuel Break
Primary Corridor
Alternate Corridor
Contingency Corridor
Emergency - Safety Zone

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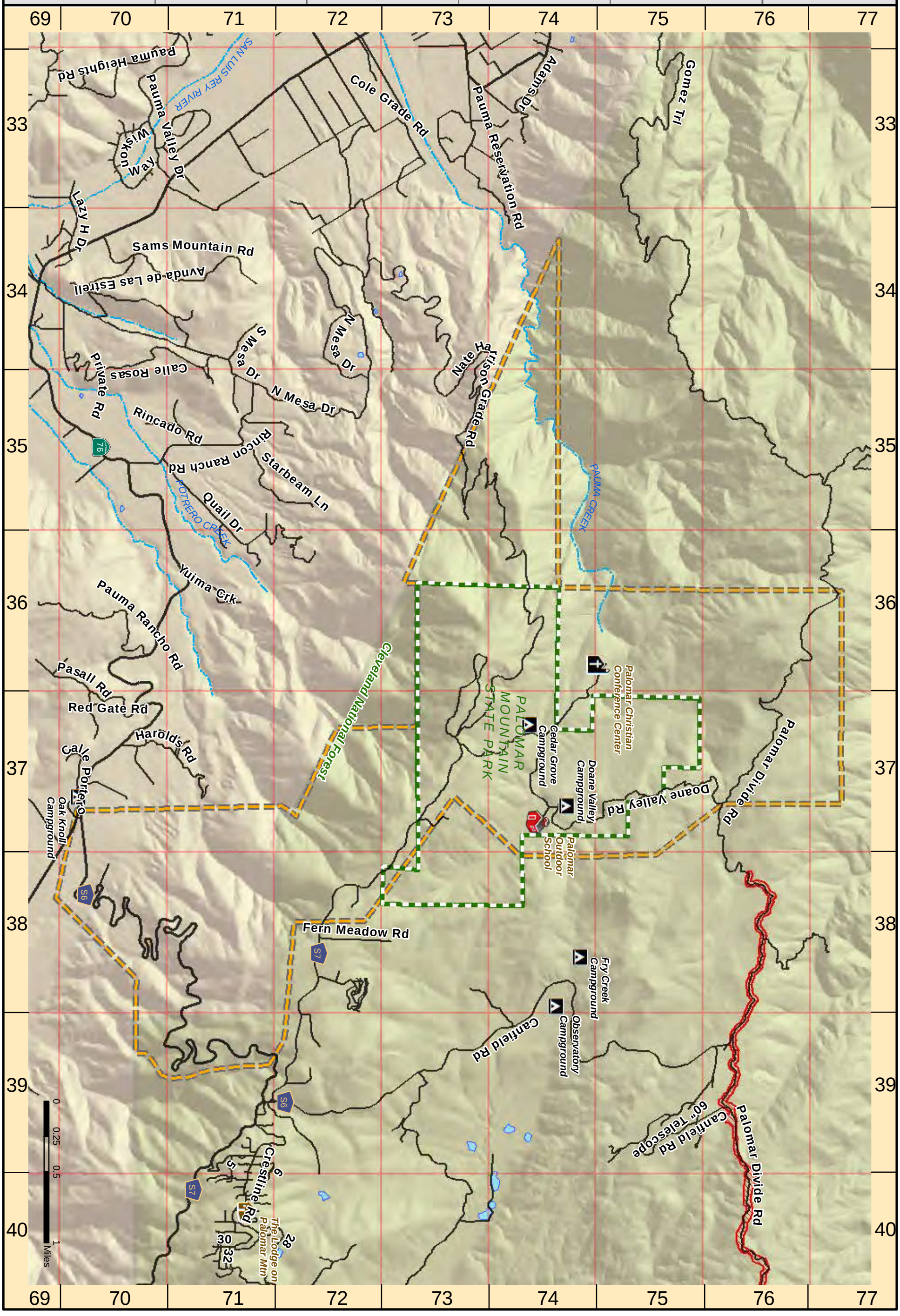

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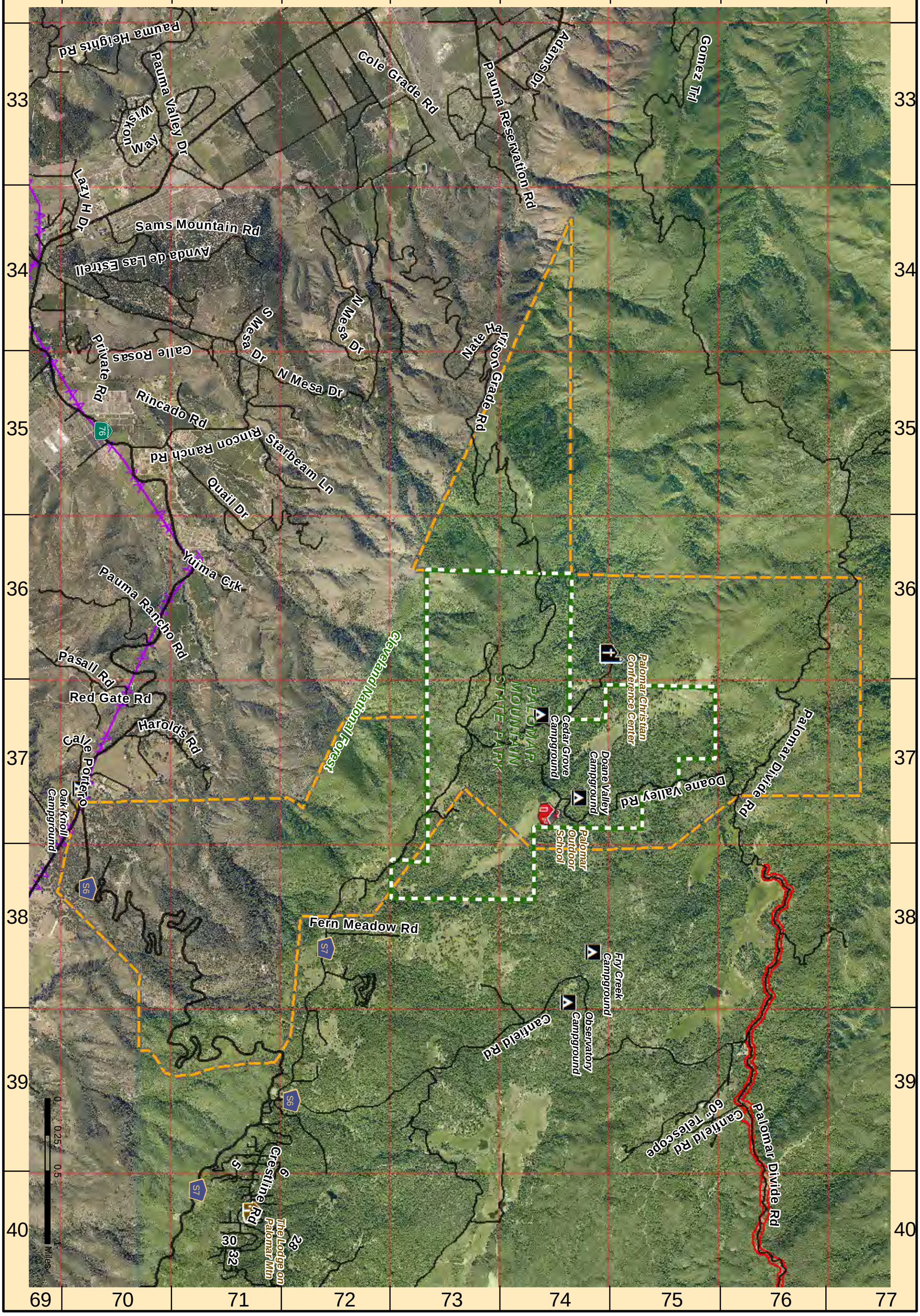

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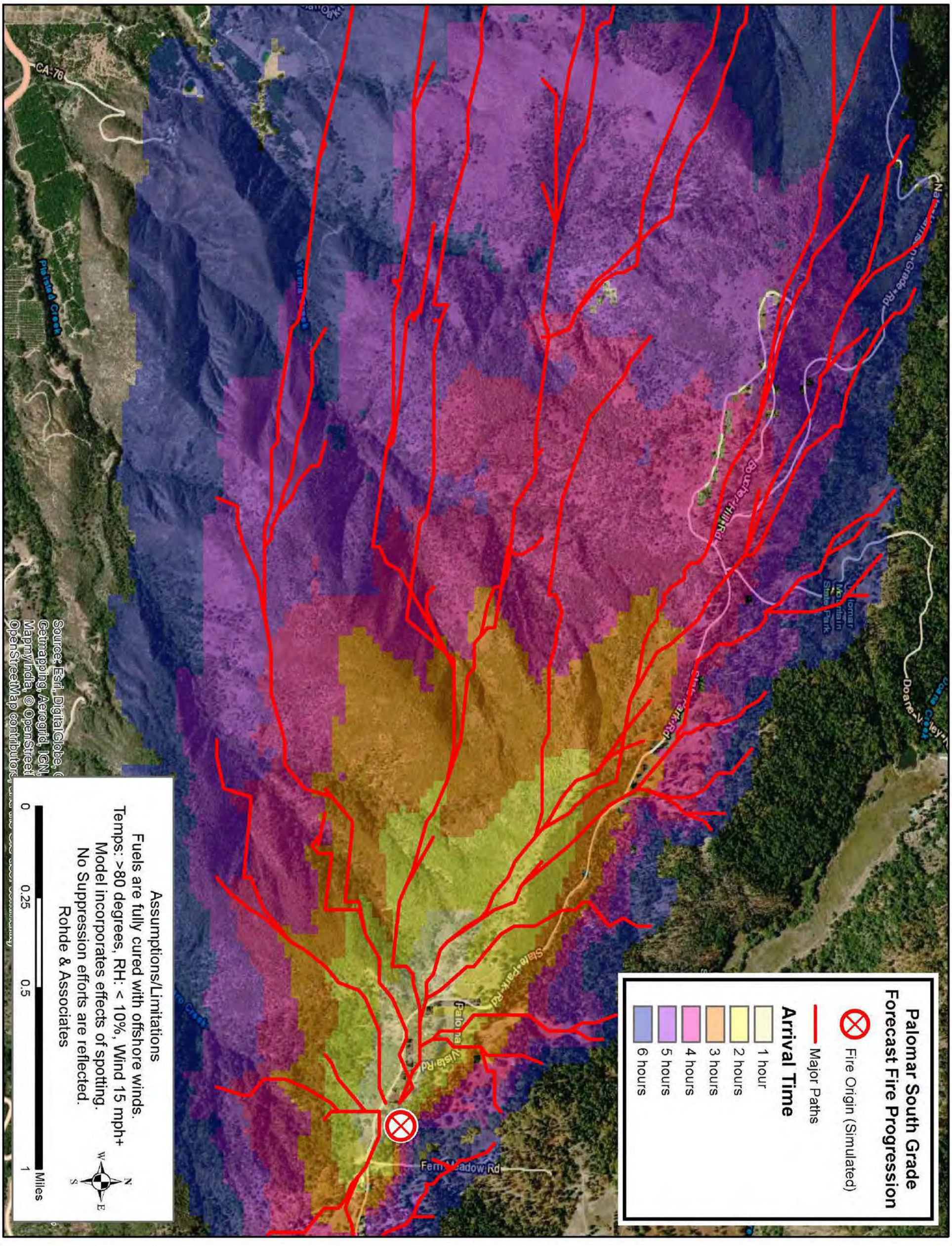
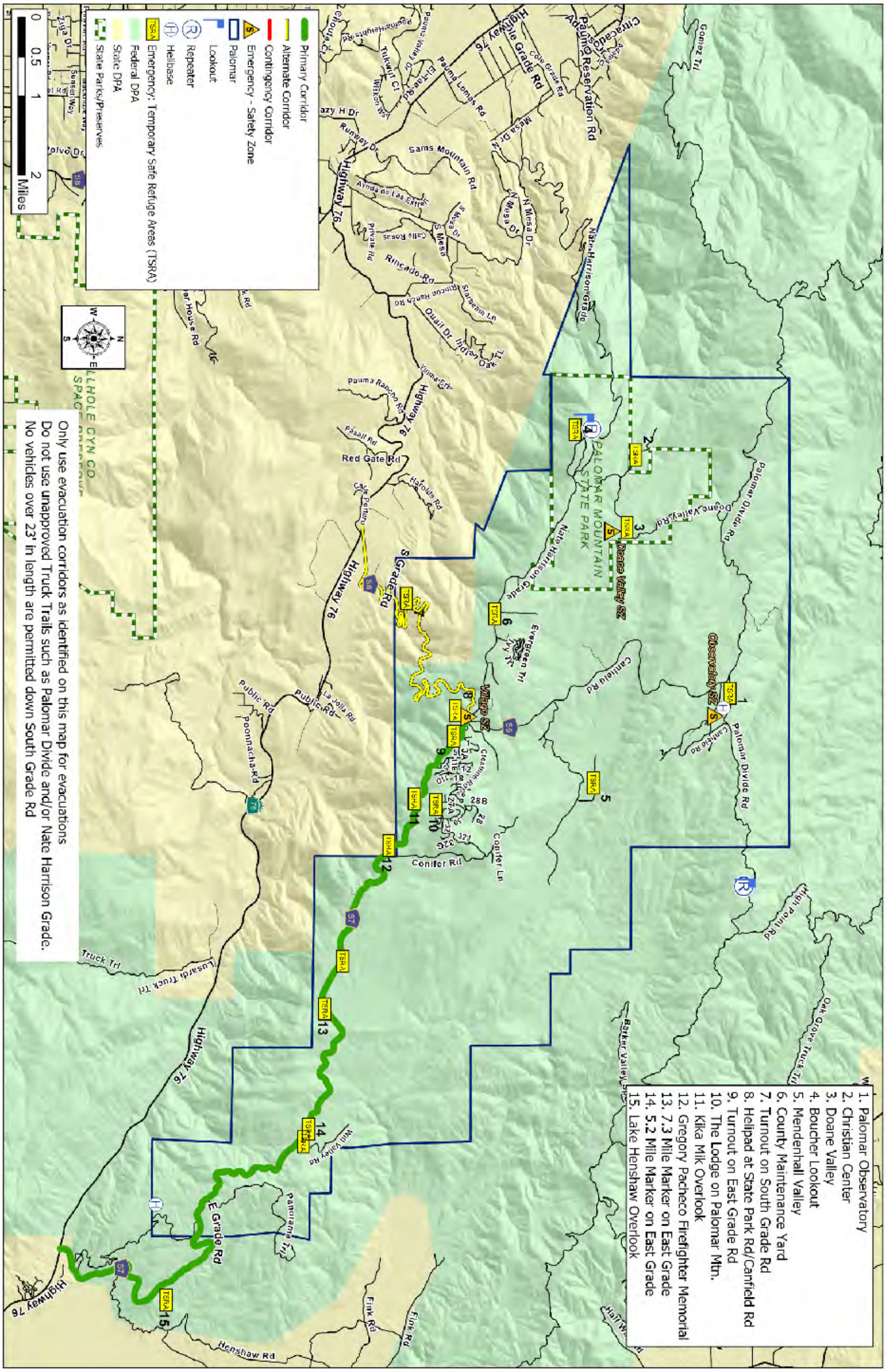
Fire Trajectory



WUI Name:	**SOUTH GRADE**		**SDF20W**
Location:	Palomar Mountain		Insp'd Date: 9/4/2019
Public Safety Grids:	7138A, 7636C	**WUI Grid No.:** 43	By: ROHDE AND ASSOC.

Risk Assessment | Tactical Plan | Tactical Map | Area Map | Aerial Map | Additional Info

Evacuation Map



STRUCTURE DEFENSE GUIDE

Structure Triage Decision Process (S-FACTS)

Survival

- Initial Assessment: can you survive here? **If not, LEAVE NOW!**
- Is there a Safety Zone nearby? **If not, LEAVE NOW!** *(IRPG)*
- Do you have a viable Escape Route?
- What is the decision point at which you will leave based on fire behavior and rate of spread?
- Is there a Temporary Refuge Area (TRA) on site? **If not, LEAVE NOW!**
  - Preplanned area for immediate, temporary refuge
    - -- Use of fire shelter should not be necessary
  - Is there a viable Escape Route to the TRA or Safety Zone?
- Is "Prep and Go" tactic an option?
- Do you have communications with your supervisor and adjoining forces?
- If safety issues cannot be mitigated, **LEAVE NOW!**

Fire Environment

- Can you survive based on current and expected fire behavior? **If not, LEAVE NOW!**
- Look up, Look Down, Look Around Indicators:
  - Fuels (characteristics, moisture, temperature)
    - -- What will the intensity of the fire be when it arrives?
    - -- How long will it take to consume the fuels?
  - Wind
    - -- Current speed/direction
    - -- Expect changing winds
  - Terrain
    - -- Are you in a chute, chimney, or saddle? **If yes, LEAVE NOW!**
    - -- Is wind in alignment with topography?
    - -- What is your position relative to topography?
    - -- Are you mid slope or on top of a ridge?
  - Atmospheric Stability
  - Fire Behavior (requires constant monitoring)
    - -- Spotting, crowning, sheeting, rate of spread?
    - -- Flame length and height?
- Other weather considerations:
  - What is the current relative humidity?
    - -- Is there an expected change?
  - Are thunderstorms forecasted?

Access

- Is access compatible with time and distance factors necessary to utilize as an Escape Route to a Safety Zone?
  - Road surface adequate for speed necessary?
  - Adequate width?
  - Turnaround/turnouts?
  - Bridges within limits for fire apparatus?
  - Drainage ditches/culverts?
  - Steep grades?
  - Is there a safe place to spot apparatus?

Construction/clearance

- Does the structure have adequate defensible space, based on topography, fuels, and current and expected fire behavior?
- Can defensible space problems be mitigated quickly?
- Will building materials and yard clutter compromise safety?
- Is the construction wood siding or shake shingle roof?
- Are there vent openings, open eaves, large glass windows facing fire front, decks with vegetation below?
  - Will ember intrusion through attic or foundation vents be a problem?
- What are the contents in the garage and outbuildings?
- Are there hazardous materials present?
- Are there propane tanks, fuel tanks, or power lines?
- Is there an adequate water supply nearby?
- Are additional resources needed to mitigate issues?
- Consider "Prep and Go" or "Prep and Defend" tactics

Time constraints

- Is there time for an adequate size up of the structure defense problem?
- Is there time to mitigate safety concerns?
- Is there time and adequate resources to properly prepare and defend the structure?
- Is there time to escape, utilizing Escape Routes, to a Safety Zone? **If not, LEAVE NOW!**

Stay or go

- Tactical decision based on the S-FACTS
- Is it safe to stay? If no, utilize "Check and Go" tactic
- Is there time to prepare the structure for defense and what will the fire behavior be when the fire gets here?
- "Prep and Go" or "Fire Front Following" tactics should be used when it is not safe to "Prep and Defend"

Structure triage categories

Not-Threatened

- Safety Zone nearby and TRA present at structure
- Construction features/defensible space make the structure unlikely to ignite
- Residents may/may not have evacuated

Threatened Defensible

- Safety Zone nearby and TRA present at structure
- Construction features/defensible space require structure defense tactics during fire front impact
- Residents may/may not have evacuated

Threatened non-Defensible

- Lack of adequate Safety Zone nearby
- Structure cannot be safely defended
- Residents must be evacuated

Entrapment avoidance

- Are you adhering to the **10 Standard Firefighting Orders**? *(IRPG)*
- Have you considered the **18 Situations that Shout Watch Out**?
- Have you considered the **Common Denominators of Fire Behavior on Tragedy Fires**? *(IRPG)*
- Are you maintaining **LCES**? *(IRPG)*
- Look Up, Look Down, Look Around *(IRPG)*
- Have Decision Points ("Trigger Points") been established?
- Conduct Risk Management *(IRPG)*
  - Situational Awareness – Hazard Assessment – Hazard Control – Decision Point – Evaluate

STRUCTURE DEFENSE TACTICAL ACTIONS

- **Check & Go** – Most appropriate action when no Safety Zone/TRA is present and fire front impact is imminent. Conduct rapid evaluation to check for occupants and evaluate for follow up action. **LEAVE promptly.**
- **Prep & Go** – Structure preparation can be safely completed prior to fire front impact. Potential fire activity is too dangerous to remain and/or there is no Safety Zone/TRA present. **LEAVE before escape routes are compromised**.
- **Prep & Defend** – Appropriate when a Safety Zone is nearby and TRA is present. Adequate time exists to prepare the structure for defense prior to fire front impact. Escape routes must be maintained.
- **Fire Front Following** – Follow-up tactic after passage of the fire front. Involves searching for victims, perimeter control, hot spotting, and ember control.
- **Bump & Run** – Resources move ahead of the fire front extinguishing spot fires and defending structures. Utilize extreme caution.
- **Anchor & Hold** – Resources use large volume fire streams to extinguish structure fires, stop structure-to-structure ignitions, protect exposures, and control embers.
- **Tactical Patrol** – Resources remain mobile and continuously monitor assigned area after fire front passage. Involves aggressive mop up around structures.

Structure defense tactics are a vital part of perimeter control operations.

- ***Stopping fire spread significantly eliminates the fire's threat to structures.***
- ***Connect contained points along the fire's perimeter – typically near the structures at risk ("Connect the Dots").***
- ***Perimeter control and structure defense should be done concurrently.***

LEVELS OF ENGAGEMENT

Consider PACE

- **P**rimary Plan (Offense)
  - Focused on firefighter safety and objectives
- **A**lternate Plan (Offense)
  - Fallback plan that closely resembles primary plan
- **C**ontingency Plan (Defense)
  - Focused on firefighter safety, move to a safety zone, temporary refuge areas
- **E**mergency Plan (Defense)
  - Firefighter survival
    - Deployment zones/Refuge areas
    - Fire shelters

Consider DRAW-D

- **D**efend – **R**einforce – **A**dvance – **W**ithdraw – **D**elay

IMMEDIATE NEED EVACUATION CHECKLIST

- Co-locate with law enforcement at ICP
- Identify evacuation area utilizing local maps. Include area of incident potential when determining evacuation area.
- Identify traffic control points for entry and exit of resources and civilians
- Identify areas that must be immediately evacuated and label "evacuation order" areas
- Identify areas that are potentially threatened and label "evacuation warning" areas
- Identify community safe refuge areas inside evacuation areas
- Determine and publish evacuation routes
- Identify and clearly communicate the decision points for implementing additional evacuation areas
- Identify areas of special needs population and large animals
- Consider use of public notification systems for evacuations

STRUCTURE DEFENSE FUNDAMENTALS

- Back equipment in for tactical mobility
- Shield apparatus from radiant heat – be aware of structure ignition potential
- Park in a cleared area (watch for power lines, trees)
- Have an engine/crew protection line identified
- Determine if residents are home. Determine best course of action – evacuate if safe to do so or shelter in place at safe location
- Maintain communications with all crew members
- Maintain at least 100 gallons of water reserve in your tank
- Top off your tank at every opportunity (use garden hose)
- For roof access, place owner's ladder at a corner of the structure on the side with the least fire threat and away from power drop
- Keep fire out of heavier fuels (suppress in lighter fuels)
- Clear area around above-ground fuel tank, shutting off tank
- Close windows and doors, including garage, leaving doors unlocked
- Place combustible outside furniture inside the structure
- Charge and place garden hoses strategically around structure for immediate use
- Move wood piles away from structures
- Consider applying foam/gel to the structure (roof and siding) and/or fuels
- **REMEMBER** to follow up with **TACTICAL PATROL**!

AlertSanDiego: WHAT YOU NEED TO KNOW

Get signed up. Get notified.

1 What is AlertSanDiego?

AlertSanDiego is the regional emergency mass notification system used by law enforcement, fire and emergency managers to send protective actions (such as evacuations) to residents and businesses within San Diego County impacted by, or who are at risk of being impacted by, an emergency or disaster.

2 How do I register?

To register your cell phone, VoIP phone and/or email address with AlertSanDiego, visit **www.ReadySanDiego.org/AlertSanDiego.**

3 Why do I need to register?

All listed and unlisted landline phone numbers are already registered in the AlertSanDiego database. Your cell phone number, VoIP phone number and email address, however, are not. You must proactively register this information into the system to be notified.

4 Will my information remain confidential?

Yes, your information will be kept confidential and will only be used by public safety officials for emergency purposes. Your information will never be sold or used for commercial purposes.

5 What other formats are available?

AlertSanDiego emergency notifications are also available in American Sign Language (ASL) format as a video with English voice and text (Just select the Accessible AlertSanDiego option in Step 3 when you register).

Register now: www.ReadySanDiego.org

QUESTIONS?
Alertsd@sdcounty.ca.gov

Image: CAL FIRE San Diego

Do you know that you're at risk?

Your home or business is located in an area of the county with the highest risk for wildfires. Wildfire season isn't just in the summer when the weather is hot and dry.
Wildfire season is year-round.

Make sure you and your family are prepared now.

Register for **AlertSanDiego** - get emergency notifications and alerts to your cell phone and email address when disaster strikes.

« www.ReadySanDiego.org »

READY, SET, GO!

YOUR PERSONAL WILDLAND FIRE ACTION GUIDE

READY, SET, GO!

Wildland Fire Action Guide

Saving Lives and Property
through Advance Planning

Fire is a constant threat in San Diego County, and drought, high temperatures in the summer and fall, combined with seasonal Santa Ana winds can lead to explosive fire growth.

In San Diego County, first responders are busy year-round fighting fires. When large fires threaten our community, local, state, federal, tribal, military and other agencies work together to save lives, protect property, and help those impacted by the disaster.

First responders can't do it alone though. Residents, especially those in the Wildland Urban Interface, play a critical role in being prepared for wildfires before, during, and after the next one strikes.

This guide has been modeled off of the Ready, Set, Go! program that is used locally, throughout California, and across the nation. This version is customized for San Diego County, with important local tips and information.

Use this guide to get "Ready" by making your home hardened against wildfire by using defensible space and smart fire resistant building and design choices. Create and practice a family disaster plan that includes storing essentials like food and water supplies, knowing how you'll meet up or communicate with each other, where you can safely evacuate to, and other important information.

Visit ReadySanDiego.org to register with AlertSanDiego to receive emergency alerts via email, text, cell and landline phones, and download the SD Emergency App to get the latest emergency updates delivered to your Android/iOS devices.

Be "Set" and prepared to leave when in danger by monitoring local media, viewing disaster updates on SDCountyEmergency.com, talking with 2-1-1 San Diego, and taking important steps to harden your home even further when you decide to evacuate.

Finally, be able to "Go" and go early, both to keep you and your family safe, and to make it easier for first responders to get into your community.

This guide is a great place to start as you take action to protect your family home, and community.

Tony Mecham, County Fire Chief

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Photos courtesy of CAL FIRE, FEMA and ©Kevin Pack/K.E. Photography

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Living in the Wildland Urban Interface and the Ember Zone

Ready, Set, Go! begins with a house that firefighters can defend

Defensible Space Works!

If you live next to a naturally vegetated area, often called the Wildland Urban Interface, provide firefighters with 100 feet of defensible space to protect your home. The buffer zone you create by removing weeds, brush and thinning vegetation helps keep the fire away from your home and reduces the risk from flying embers. Firewise Communities and your local fire department's brush management guidelines provide valuable guidance on property enhancements.

A home within one mile of a natural area is in the Ember Zone. Wind-driven embers can attack your home. You and your home must be prepared well before a fire occurs. Ember fires can destroy homes or neighborhoods far from the actual flame front of the wildland fire.

What is Defensible Space?

Defensible space is the required space between a structure and the wildland area that, under normal conditions, creates a sufficient buffer to slow or halt the spread of wildland fire to a structure. It protects the home from igniting due to direct flame or radiant heat. Defensible space is essential for structure survivability during wildland fire conditions. For more information about defensible space zones and preparedness techniques within each, visit ReadySanDiego.org/wildland-fire

ZONE ONE

Zone One extends 50 feet from your home.

- Must be permanently irrigated to maintain green and healthy plants.
- Is primarily low-growing plant material, with the exception of trees. Plants shall be low-fuel and fire-resistive.
- Trim tree canopies regularly to remove dead wood and keep branches a minimum of 10 feet from structures, chimney outlets and other trees.
- Remove leaf litter (dry leaves/pine needles) from yard, roof and rain gutters.
- Relocate woodpiles and other combustible materials into Zone Two.
- Remove combustible material and vegetation from around and under decks.
- Remove or prune vegetation near windows.
- Remove “ladder fuels” (low-level vegetation that would allow the fire to spread from the ground to the tree canopy). Create a separation between low-level vegetation and tree branches by reducing the height of the vegetation and/or trimming low branches.

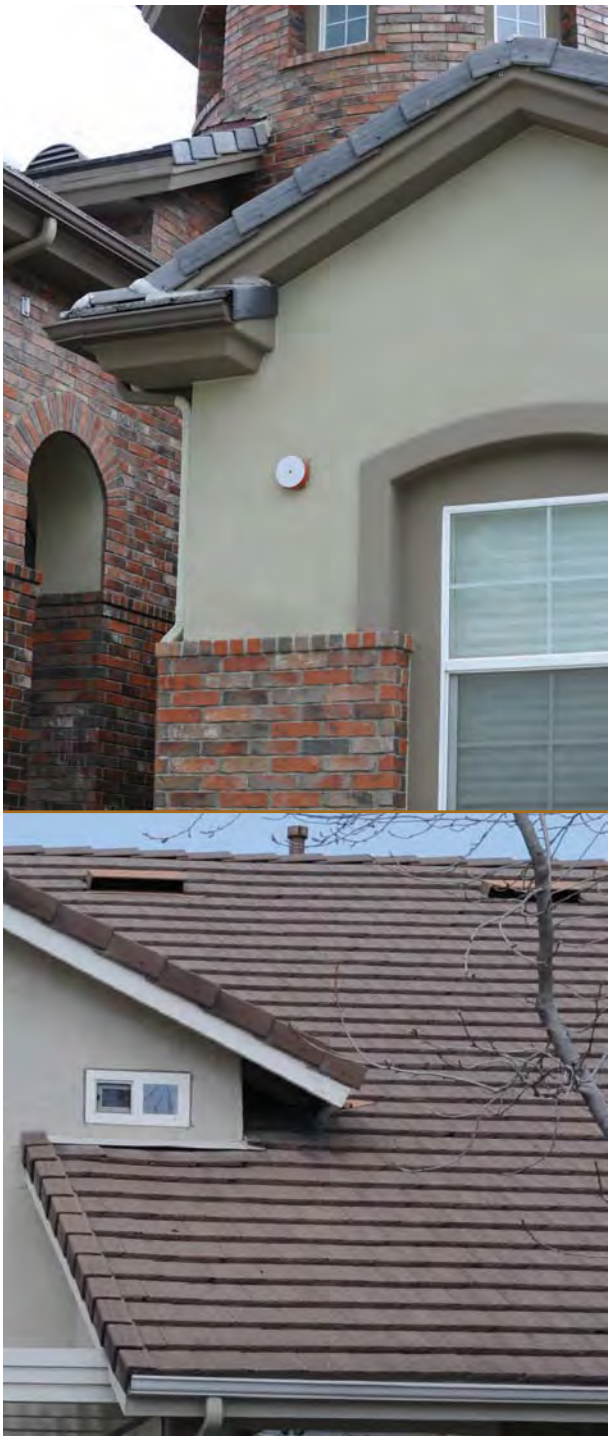
ZONE TWO

Zone Two extends 50 to 100 feet from your home.

- Minimize the chance of fire jumping from plant to plant by removing dead material and removing or thinning vegetation seasonally. The minimum spacing between vegetation is three times the dimension of the plant.
- There should be no permanent irrigation in Zone Two.
- Remove “ladder fuels.”
- Cut or mow annual grass down to a maximum height of 4 inches.
- Trim tree canopies regularly to keep branches a minimum of 10 feet from other trees.

What is a Hardened Home?

Construction materials and the quality of the defensible space surrounding a home are what gives it the best chance to survive a wildland fire. Embers from a wildland fire can find the weak link in your home's fire protection scheme and gain the upper hand because of a small, overlooked or seemingly inconsequential factor. However, there are measures you can take to safeguard your home from wildland fire. While you may not be able to accomplish all the measures listed below, each will increase your home's, and possibly your family's, safety and survival during a wildland fire.



ROOFS

Roofs are the most vulnerable surface where embers land because they can lodge and start a fire. Roof valleys, open ends of barrel tiles and rain gutters are all points of entry.

EAVES

Embers can gather under open eaves and ignite exposed wood or other combustible material.

VENTS

Embers can enter the attic or other concealed spaces through vents and ignite combustible materials. Vents in eaves and cornices are particularly vulnerable, as are any unscreened vents.

WALLS

Combustible siding or other combustible or overlapping materials provide surfaces or crevices for embers to nestle and ignite.

WINDOWS and DOORS

Embers can enter through open windows and gaps in doors, including garage doors. Plants or combustible storage near windows can ignite from embers and generate heat that can break windows and/or melt combustible frames.

BALCONIES and DECKS

Embers can collect in or on combustible surfaces or the undersides of decks and balconies, ignite the material and enter the home through walls or windows.

To harden your home further, consider protecting your home with a residential fire sprinkler system. In addition to extinguishing a fire started by an ember that enters your home, it also protects you and your family year-round from any fire that may start in your home.

Tour a Wildland Fire Prepared Home

Home Site and Yard: Ensure you have at least a 100-foot radius of defensible space (thinned vegetation) around your home. Note that even more clearance may be needed for homes in severe hazard areas. This means looking beyond what you own to determine the impact a common slope or neighbors' yard will have on your property during a wildland fire.

Cut and remove dry weeds and grass before noon when temperatures are cooler to reduce the chance of sparking a fire.

Landscape with fire-resistant plants that have a high moisture content and are low-growing.

Keep woodpiles, propane tanks and combustible materials away from your home and other structures such as garages, barns and sheds.

Ensure that trees are far away from power lines.

Inside: Keep working fire extinguishers on hand. Install smoke alarms and carbon monoxide detectors on each level of your home and near bedrooms. Test them monthly and change the batteries twice a year.

Address: Make sure your address is clearly visible from the road.

Roof: Your roof is the most vulnerable part of your home because it can easily catch fire from wind-blown embers. Homes with wood-shake or shingle roofs are at high risk of being destroyed during a wildland fire.

Build your roof or re-roof with fire-resistant materials such as composition, metal or tile. Block any spaces between roof decking and covering to prevent ember intrusion.

Clear pine needles, leaves and other debris from your roof and gutters.

Cut any tree branches within ten feet of your roof.

Vents: Vents on homes are particularly vulnerable to flying embers.

All vent openings should be covered with ⅛ inch metal mesh. Do not use fiberglass or plastic mesh because they can melt and burn.

Attic vents in eaves or cornices should be baffled or otherwise protected to prevent ember intrusion (mesh is not enough).

Windows: Heat from a wildland fire can cause windows to break even before the home ignites. This allows burning embers to enter and start internal fires. Single-paned and large windows are particularly vulnerable.

Install dual-paned windows with the exterior pane of tempered glass to reduce the chance of breakage in a fire.

Limit the size and number of windows in your home that face large areas of vegetation.

Walls: Wood products, such as boards, panels or shingles, are common siding materials. However, they are combustible and not good choices for fire-prone areas.

Build or remodel with fire-resistant building materials, such as brick, cement-fiber board, masonry or stucco.

Be sure to extend materials from foundation to roof.

Garage: Have a fire extinguisher and tools such as a shovel, rake, bucket and hoe available for fire emergencies.

Install a solid door with self-closing hinges between living areas and the garage. Install weather stripping around and under door to prevent ember intrusion.

Store all combustibles and flammable liquids away from ignition sources.

Driveways and Access Roads: Driveways should be designed to allow fire and emergency vehicles and equipment to reach your house.

Access roads should have a minimum 10-foot clearance on either side of the traveled section of the roadway and should allow for two-way traffic.

Ensure that all gates open inward and are wide enough to accommodate emergency equipment.

Trim trees and shrubs overhanging the road to a minimum of 13½ feet to allow emergency vehicles to pass.

Non-Combustible Fencing: Make sure to use non-combustible fencing to protect your home during a wildland fire.

Non-Combustible Boxed In Eaves: Box in eaves with non-combustible materials to prevent accumulation of embers.

Raingutters: Screen or enclose rain gutters to prevent accumulation of plant debris.

Water Supply: Have multiple garden hoses that are long enough to reach any area of your home and other structures on your property.

If you have a pool or well, consider a pump.

Chimney: Cover your chimney and stovepipe outlets with a non-flammable screen of ½ inch wire mesh or smaller to prevent embers from escaping and igniting a fire.

Make sure that your chimney is at least 10 feet away from any tree branches.

Decks and Balconies: Decks, balconies, and other floor projections and attachments must be of one – or a combination – of the following:

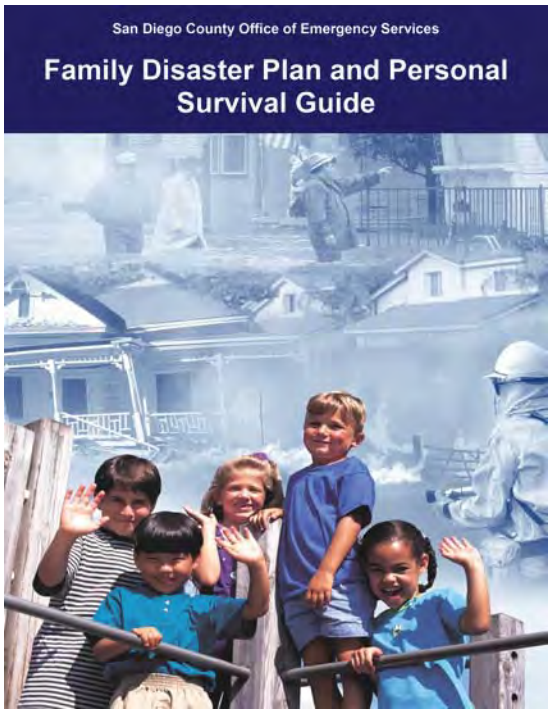
- non-combustible construction (e.g., concrete, metal)
- protected by one-hour fire-resistive material (e.g., stucco, cement-fiber board, ceramic tile, deck surface listed by approved evaluation service as one-hour-rated or Class A roof covering)
- approved fire-retardant treated materials (factory-applied fire retardant, pressure-treated lumber, listed for exterior use, installed per listing)
- heavy timber construction (minimum 4x8 joists, 4x10 or 6x8 beams, 3x ledgers, and 6x6 columns/posts)
- alternative decking materials per County Building Code 92.1.709A.1.4

READY, SET, GO!

Create Your Own Action Guide

Now that you've done everything you can to protect your house, its time to prepare your family. Your **Wildland Fire Action Guide** must be prepared well in advance of a fire. Include *all* members of your household. Use these checklists to help you gain a situational awareness of the threat and to prepare your Wildland Fire Action Guide. For more information on property and home preparedness before a fire threat, review the preparedness checklist on the Firewise Communities website, www.firewise.org

Ready – Preparing for the Fire Threat



For a more extensive survival guide, please visit: ReadySanDiego.org/make-a-plan

- ☐ Create an in-depth family disaster plan at ReadySanDiego.org
- ☐ Register to receive emergency notifications on phone, cell, text, and email for your area. Sign up at AlertSanDiego.org
- ☐ Have fire extinguishers on hand
- ☐ Ensure that your family knows the location of your utility shut-off controls
- ☐ Plan and practice several different evacuation routes
- ☐ Designate an emergency meeting location
- ☐ Assemble an emergency supply kit (water, food, medicine)
- ☐ Maintain a list of emergency contact numbers
- ☐ Have a portable radio

San Diego County

All the information in your hands when you need it! Get the SD Emergency App for Android and iOS!

2-1-1 SAN DIEGO DISASTERRESPONSE

Find out how to volunteer, and get the most up-to-date disaster information! Call 2-1-1

ReadySanDiego.org
Prepare. Plan. Stay Informed.

Visit ReadySanDiego.org for all your preparedness needs! Get a plan, get the app, get informed!

Set – Situational Awareness when a Fire Starts

- [ ] Alert family and neighbors
- [ ] Ensure that you have your emergency supply kit
- [ ] Stay tuned to media, visit: SDCountyEmergency.com
- [ ] Close all windows and doors, leaving them unlocked
- [ ] Remove flammable window shades and curtains
- [ ] Move furniture to the center of the room
- [ ] Turn off pilot lights and air conditioning
- [ ] Leave inside and outside lights on so firefighters can see your house through smoke
- [ ] Bring patio furniture, children's toys, etc. inside
- [ ] Turn off propane tanks and other gas at the meter
- [ ] Don't leave sprinklers on or water running
- [ ] Back your car into the driveway to facilitate a quick departure

- [ ] Cover attic and ground vents with pre-cut plywood or commercial covers
- [ ] Call 2-1-1 for all non-emergency inquiries or visit: 211SanDiego.org

IF YOU ARE TRAPPED: SURVIVAL TIPS

- [ ] Call 9-1-1
- [ ] Remain inside your home until the fire passes
- [ ] Shelter away from outside walls
- [ ] Bring garden hoses inside the house so embers don't destroy them
- [ ] Patrol inside your home for spot fires and extinguish any you find
- [ ] Wear long sleeves and long pants made of natural fibers such as cotton
- [ ] Stay hydrated
- [ ] Ensure you can exit the home if it catches fire (remember if it is hot inside the house, it is four to five times hotter outside)
- [ ] Fill sinks and tubs for an emergency water supply
- [ ] Place wet towels under doors to keep smoke and embers out
- [ ] After the fire has passed, check your home and roof. Extinguish any fires, sparks or embers
- [ ] Check inside the attic for hidden embers
- [ ] If there are fires that you cannot extinguish with a small amount of water or in a short period of time, call 9-1-1

Go – Leave Early

By leaving early, you give your family the best chance of surviving a wildland fire. You also help firefighters by keeping roads clear of congestion.

WHEN TO LEAVE

Do not wait to be advised to leave if there is a possible threat to your home or evacuation route. Leave early enough to avoid being caught in fire, smoke or road congestion. If you are advised to leave by local authorities, do not hesitate!

MEETING LOCATION

Travel to a predetermined location. It should be a low-risk area, such as a well-prepared neighbor or relative's house, a shelter or motel, etc.

HOW TO GET THERE

Know several travel routes out of your community in case one route is blocked by the fire or by emergency vehicles.

WHAT TO TAKE

Take your emergency supply kit containing your prepared family and pet's necessary items.

The County of San Diego Office of Emergency Services has a free, printable, All Hazards Family Disaster Plan and Survival Guide at: ReadySanDiego.org/make-a-plan

Here is a brief checklist to get your emergency supply kit started.

- ☐ Three-day supply of water (one gallon per person per day)
- ☐ Non-perishable food for all family members and pets (three-day supply)
- ☐ First aid kit
- ☐ Flashlight, battery-powered radio, and extra batteries
- ☐ An extra set of car keys, credit cards and cash or traveler's checks
- ☐ Sanitation supplies
- ☐ Extra eyeglasses or contact lenses
- ☐ Important family documents and contact numbers
- ☐ Map marked with evacuation routes
- ☐ Prescriptions or special medications
- ☐ Family photos, valuable and other irreplaceable items that are easy to carry
- ☐ Personal computers, hard drives, disks and flash drivers
- ☐ Chargers for electronic communication devices

Note: Keep a pair of old shoes and a flashlight handy in case of a sudden evacuation at night.

Why can't I immediately return home?

Although a fire has been contained or extinguished there are post-hazard concerns that must be addressed before re-entry into the impacted area(s) may be permitted. Priorities for re-entry include:

1. Safety
2. Security
3. Damage Assessment
4. Restoration of Services
5. Communication of Information

The impacted areas must be thoroughly investigated to ensure it is safe for residents to return and that services have been restored. You will be notified of the re-entry status through: *emergency broadcast radio, television, internet www.SDCountyEmergency.com, 2-1-1, community briefings, and informational updates at shelters.*

Returning Home

After a disaster, **DO NOT attempt to return to your home or cross any barriers or caution tape without permission from law enforcement officials**. When returning home, be cautious in your neighborhood and watch out for:

- Emergency personnel still operating in the area.
- Power lines lying on the ground.
- Small fires that may flare up without warning.
- Ash pits, which are holes filled with hot ash created by burned trees.
- Damaged buildings or debris (including glass, nails, etc.)
- Charred power poles and trees that may be unstable and fall.

Take the following precautions when attempting to enter your house:

POWER:

If a person or piece of equipment comes in contact with an electric line, or if a line is down or broken.

- ☐ **Call 9-1-1**.
- ☐ If you see an electrical fire, fight it with a dry CO(2) extinguisher.
- ☐ If possible, shut off the power.
- ☐ **Don't touch the person or any equipment involved**. The line may still be energized and dangerous.
- ☐ Freeing someone from energized power lines or equipment should only be attempted by a qualified SDG&E employee or a trained rescuer such as a fire fighter.
- ☐ Always assume that power lines are energized.
- ☐ Do not smoke or attempt to light anything. Use a **flashlight instead**.

GAS:

- ☐ Check to see if your gas utility is working properly. If you smell gas, leave your home immediately, and call (24/7) SDG&E at 1-800-411-7343.
- ☐ **DO NOT** light a match, candle, or cigarette.
- ☐ **DO NOT** turn electrical devices on or off, including light switches.
- ☐ **DO NOT** start an engine or use any device, including a telephone, which could cause a spark.
- ☐ **DO NOT** attempt to control the leak or repair the damaged pipe or meter. Do not use or turn off any equipment that could cause a spark.

- ☐ Check for burning embers on roofs, gutters, porches, attic, crawlspace, and throughout your property for several days after a wildfire.

- ☐ Check for any structural damage before entering your home. If you are uncertain, have your home professionally inspected before returning.

- ☐ Do not smoke or attempt to light anything as there could be flammables or leaking gases. Use a flashlight instead.

- ☐ Open windows and doors to allow airflow, which will help dry out of any water damage areas.

San Diego Gas & Electric can be reached at 1-800-411-7343 or SDGE.com/customer-service/contact-us
For more information on damage assessment visit the County's Recovery page at SDCountyRecovery.com.

Fire Action Guide

Out of Area Contact: _____ **Phone #:** _____

Work: _____ **School:** _____ **Other:** _____

Evacuation Routes: _____

_____

_____

Meeting Location: _____ **Location of Supply Kit:** _____

Information: SDCountyEmergency.com 211SanDiego.org SD Emergency App

You can create a more in-depth plan for free at: ReadySanDiego.org/make-a-plan

READY, SET, GO!

Safety Checklist

Tips To Improve Family and Property Survival During A Wildland Fire

Home	Yes	No
1. Does your home have a metal, composition, tile or other non-combustible roof with capped ends and covered fascia?	☐	☐
2. Are the rain gutters and roof free of leaves, needles and branches?	☐	☐
3. Are all vent openings screened with 1/8 inch non-combustible, corrosion-resistant metal mesh?	☐	☐
4. Are approved spark arrestors on chimneys?	☐	☐
5. Does the house have non-combustible siding material?	☐	☐
6. Are the eaves "boxed in" and the decks enclosed?	☐	☐
7. Are the windows dual-paned or tempered glass?	☐	☐
8. Are decks, porches and similar areas made of non-combustible material and are they free of easily combustible material?	☐	☐
9. Is all firewood at least 30 feet from the house?	☐	☐

Defensible Space	Yes	No
1. Has dead vegetation been removed from the defensible space zones around your home? (Consider adding distance due to slope of property.)	☐	☐
2. Is the required separation between shrubs maintained?	☐	☐
3. Have ladder fuels been removed?	☐	☐
4. Is there a clean and green area extending at least 50 feet from the house?	☐	☐
5. Is there a non-combustible area within five feet of the house?	☐	☐
6. Is the required separation between trees and crowns maintained?	☐	☐

Emergency Access	Yes	No
1. Is the home address plainly legible and visible from the street?	☐	☐
2. Are trees and shrubs overhanging the street trimmed to 15½ feet?	☐	☐
3. If your home has a long driveway, does it have a suitable turnaround area?	☐	☐

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Prepare. Plan. Stay Informed.

Insurance Institute for Business & Home Safety

Evacuation Tips

Evacuation Tips

Evacuations save lives and allow responding personnel to focus on the emergency at hand.
Please evacuate promptly when requested!

The Law

California law authorizes officers to restrict access to any area where a menace to public health or safety exists due to a calamity such as flood, storm, fire, earthquake, explosion, accident or other disaster. Refusal to comply is a misdemeanor. (Penal Code 409.5)

Evacuation Orders

The terms ***Voluntary*** and ***Mandatory*** are used to describe evacuation orders. However, local jurisdictions may use other terminology such as *Precautionary* and *Immediate Threat*. These terms are used to alert you to the significance of the danger. **All evacuation instructions provided by officials should be followed immediately for your safety.**

Long Before a Fire Threatens

Prepare an *Evacuation Checklist* and Organize:

- Critical medications.
- Important personal papers, photos.
- Essential valuables.
- Pet and livestock transport, limited amount of pet food.
- Change of clothing, toiletries.
- Cell phone.
- Critical papers and effects in a fire-proof safe.
- An Evacuation Route Map with at least two routes.*
- Drive your planned route of escape before an actual emergency.*

*During an evacuation, law enforcement/ emergency personnel may determine your route.

If Evacuation is a Possibility

- Locate your *Evacuation Checklist* and place the items in your vehicle.
- Park your vehicle facing outward and carry your car keys with you.
- Locate your pets and keep them nearby.
- Prepare farm animals for transport.
- Place connected garden hoses and buckets full of water around the house.
- Move propane BBQ appliances away from structures.
- Cover-up. Wear long pants, long sleeve shirt, heavy shoes/boots, cap, dry bandanna for face cover, goggles or glasses. 100% cotton is preferable.
- Leave lights on in the house - door unlocked.
- Leave windows closed - air conditioning off.

Evacuation Tips

The Evacuation Process

1. Officials will determine the areas to be evacuated and the routes to use depending upon the fire's location, behavior, winds, terrain, etc.
2. Law enforcement agencies are typically responsible for enforcing an evacuation order. **Follow their directions promptly.**
3. You will be advised of potential evacuations as early as possible. You must take the initiative to stay informed and aware. Listen to your radio/TV for announcements from law enforcement and emergency personnel.
4. You may be directed to temporary assembly areas to await transfer to a safe location.

If You Become Trapped

While in your vehicle:

- Stay calm.
- Park your vehicle in an area clear of vegetation.
- Close all vehicle windows and vents.
- Cover yourself with wool blanket or jacket.
- Lie on vehicle floor.
- Use your cell phone to advise officials – Call 911.

While on foot:

- Stay calm.
- Go to an area clear of vegetation, a ditch or depression if possible.
- Lie face down, cover up.
- Use your cell phone to advise officials - Call 911.

While in your home:

- Stay calm, keep your family together.
- Call 911 and inform authorities of your location.
- Fill sinks and tubs with cold water.
- Keep doors and windows closed, but unlocked.
- Stay inside your house.
- Stay away from outside walls and windows.

** Note – it will get hot in the house, but it is much hotter, and more dangerous outside.*

After the fire passes, and if it is safe, check the following areas for fire:

- The roof and house exterior.
- Under decks and inside your attic.
- Your yard for burning trees, woodpiles, etc.

Returning Home

Fire officials will determine when it is safe for you to return to your home. This will be done as soon as possible considering safety and accessibility.

When you return home:

- Be alert for downed power lines and other hazards.
- Check propane tanks, regulators, and lines before turning gas on.
- Check your residence carefully for hidden embers or smoldering fires.

www.fire.ca.gov

Animal Evacuation

Wildland Fire Safety for Your Livestock and Pets

You've taken steps to keep your family and home fire safe. Don't forget your pets and livestock. With some advance planning you can increase their chances of surviving a wildland fire.

Livestock

- Clear defensible space around your barns, pastures and property just as you do your home. PRC 4291 requires clearance around **all** structures on your property.
- Plan ahead, know where you would evacuate the animals. Contact your local fairgrounds, stockyards, equestrian centers, friends etc. about their policies and ability to take livestock temporarily in an emergency. Have several evacuation routes in mind. If you don't have your own truck and trailer, make arrangements with local companies or neighbors before disaster strikes. Make sure your neighbors have your contact numbers (cell phone, work, home, etc.).
- Have vaccination/ medical records, registration papers and photographs of your animals (proof of ownership) and your Disaster Preparedness Kit.
- If you must leave your animals, leave them in a preselected, cleared area. Leave enough hay for 48 to 72 hours. Do not rely on automatic watering systems. Power may be lost.
- **Do not wait until the last minute to start evacuating!**

Livestock Disaster Preparedness Kit

- Hay, feed and water for three days
- Non-nylon leads and halters
- First aid items
- Wire cutters and a sharp knife
- Hoof pick
- Leg wraps
- Shovel
- Water buckets
- Plastic trash barrel with a lid
- Portable radio and extra batteries
- Flashlights

During a wildland fire, local animal rescue organizations work with law enforcement and fire departments to rescue as many animals as they can. In battling a wildfire, firefighters will do what they can but they are not responsible for evacuating your livestock. Firefighters may cut fences or open gates to free trapped animals.

Animal Evacuation

Pets

- Plan ahead. Know where you will take or leave your pets. In case you are not home when disaster strikes, arrange in advance for a neighbor to check on or transport your pets. Make sure your neighbors have your contact numbers (cell phone, work, home, etc.). In the event of evacuation pets may not be allowed inside human emergency shelters - have an alternate prearranged location to take your animals.
- Make sure your pets are always wearing properly fitted collars with personal identification, rabies and license tags.
- Each animal should have it's own pet carrier. Birds, rodents and reptiles should be transported in cages. Cover cages with a light sheet or cloth to minimize their fear.
- Store vaccination/medical records, veterinary contact information, proof of ownership, a current photo, and a Disaster Preparedness Kit in one location.

Pet Disaster Preparedness Kit

- Pet carrier for each pet
- Two week supply of food and water
- Non-spill food and water bowls
- Pet first-aid kit
- Medications and dosing instructions
- Cat litter box and litter
- Plastic bags for waste disposal
- Paper towels
- Disinfectants
- Leashes/collars/harnesses
- Blankets
- Toys and treats
- Newspaper

If You Must Leave Your Pet

- If you must leave your pets, bring them indoors.
  Never leave pets chained outdoors!
- Use a room with no windows and adequate ventilation, such as a utility room, garage, bathroom, or other area that can be easily cleaned.
  Do not tie pets up!
- Leave only dry foods and fresh water in non-spill containers. If possible open a faucet to let water drip into a large container or partially fill a bathtub with water.

www.fire.ca.gov

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January 1987

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Citations (69)

Abstract

This research assesses issues and criticisms of evacuation planning for all hazards under an integrated emergency management concept and reviews research that addresses those issues. The work identifies gaps in knowledge about evacuation planning issues and research that can address these gaps. Over 300 documents were reviewed and abstracted, and key findings were summarized. Issues were identified by review of hearings, litigations, critiques, and discussions with planners and experts. Evacuation planning for some hazards has integrated physical risk studies with quantitative evacuation traffic modeling and behavioral research to produce comprehensive planning guidance. The adoption of an integrated or generic emergency management approach has bolstered and will further bolster the expediency of evacuation planning. Over the past ten years, most aspects of evacuation logistics have been defined and researched. There are indications that the local implementation of evacuation procedures has improved. People who could have evacuated to safety continue to die in disasters. Our research identified ten major issues in evacuation planning that cut across hazards. Planning for large-scale evacuations requires improvement. A better understanding of special evacuation planning needs for fast-moving events is needed. Evacuation planning for concurrent hazardous events is lacking. A better understanding of human behavior in evacuations is desirable. The accuracy of evacuation time estimates should be established. Guidelines on reentry after an evacuation should be improved. Special populations planning requires further investigation. Liability for evacuation decisions should be resolved. Uncertainties and problems in evacuation decision-making need greater attention. Adoption and implementation of integrated evacuation plans should be investigated. 222 refs., 12 figs., 6 tabs.

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Evacuation: An Assessment of Planning and Research

John H. Sorensen
Barbara M. Vogt
Dennis S. Mileti

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ENERGY DIVISION

EVACUATION: AN ASSESSMENT OF PLANNING AND RESEARCH

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EXECUTIVE SUMMARY

EVACUATION: AN ASSESSMENT OF PLANNING AND RESEARCH

The purpose of this research was to assess issues and criticism of evacuation planning for all hazards under an integrated emergency management concept, and to review research that addresses those issues. The work identifies gaps in knowledge about evacuation planning issues and the research that could address these gaps.

In the course of this research, over 300 documents were reviewed and abstracted, and key findings were summarized. Issues were identified by review of hearings, litigations, critiques, and discussions with planners and experts. A comparison of the research findings with the issues leads to the conclusions presented in this executive summary.

ES 1. PROGRESS IN EVACUATION PLANNING: 1975-1985

Over the past decade, evacuation planning has become more sophisticated and advanced. Progress has been made in at least four major ways. First, evacuation planning for some hazards has integrated physical risk studies with quantitative evacuation traffic modeling and behavioral research to produce comprehensive planning guidance. The best examples of this approach are found in hurricane evacuation planning and nuclear power plant evacuation planning. For the former, extensive modeling of hurricane storm surge defines the maximum levels of water inundation. Vulnerability studies identify populations at risk, and behavioral studies are used to estimate evacuation departures and destination. Combined with a quantitative evacuation time estimate, local emergency planners know when they must make an evacuation decision and which areas to evacuate. This type of approach is less well developed for other hazards, although FEMA is moving in the direction of initiating similar programs for some other hazard types. Second, the adoption of an integrated or generic emergency management approach has and will further bolster the expediency of evacuation planning. Given the integrated scientific approach being pursued, integrated planning will eliminate many overlapping planning tasks. Furthermore, it will encourage more flexible emergency evacuation capabilities that will apply to most conceivable contingencies.

Third, over the past 10 years, most aspects of evacuation logistics have been defined and researched and, as a result, are well understood. Withstanding the issues raised in the subsequent section, the knowledge of how to move small or moderately large numbers of people is fairly well developed. This does not mean this knowledge has been implemented or adopted in all evacuation plans, or that some hazard-specific uncertainties have been eliminated. Overall, however, we know the resource

requirements needed to evacuate most populations from threatened areas in a reasonable length of time.

Finally, there are indications that the local implementation of evacuation procedures has improved. Each year thousands of people are successfully evacuated from floods and hazardous-material accidents. Evacuation rates from high risk coastal areas preceding hurricanes are very high, and deaths from hurricane surge have been significantly reduced. Many specific success stories could be cited.

Some issues concerning evacuation planning still, however, remain unresolved. The fact is that people who could have evacuated to safety continue to die in disasters. The next section defines and discusses these issues.

ES 2. UNRESOLVED ISSUES IN EVACUATION PLANNING

Our research has identified ten major issues in evacuation planning that cut across hazards. These are issues that can be completely or partially resolved through additional research. Additional hazard-specific issues also exist and are addressed in the accompanying report. Each issue is now discussed and general research needs are identified.

ES 2.1 PLANNING FOR LARGE SCALE EVACUATIONS

Several issues regarding the planning needs for and feasibility of evacuating large urban areas are still unresolved. Large-scale evacuation concepts have been primarily derived from the now abandoned crisis relocation planning and from hurricane evacuation planning. Under the integrated planning concept large-scale evacuations are applicable for many hazardous situations in heavily populated areas. For example, an earthquake prediction could lead to large population movements, as could a nuclear transport accident or a terrorist-placed nuclear weapon.

Uncertainty stems from questions regarding extrapolation of the well-defined logistics of evacuation of small populations to massive ones. For example the logistics of reverse traffic flow after a sporting event are understood; however, it is unclear whether they could apply to evacuation routes out of Dade County, Florida, following a hurricane evacuation decision. The Federal Emergency Management Agency (FEMA) has made significant progress toward providing planning guidance on large-scale evacuation although some of the principles remain untested and perhaps are untestable.

Second, under an integrated approach, it is unclear what special planning elements for large-scale evacuation will be adopted by large cities. Furthermore, there is a need to ensure consistency in planning guidance coming from FEMA regarding large-scale evacuation. Conceptually

evacuating Miami for a hurricane is not greatly different than evacuation for other possible causes.

Finally, we are of the opinion that large-scale evacuation planning may have implementation problems; however, these problems do not warrant abandonment of planning or even plan implementation. Emergency management is not a zero-risk process; it is a design to prevent loss of life and property. Continued efforts at refining abilities to move large populations and estimating the effectiveness of evacuations are warranted.

ES 2.2 SPECIAL EVACUATION PLANNING NEEDS FOR FAST MOVING EVENTS

Evacuation has routinely been cast as a solution to lost lives and moveable property when enough time exists for its successful implementation. Available time between the detection of a disaster's impending impact and its striking an endangered population, however, can be and has been short. Little is known about the special planning needs for fast-moving events that could help implement fast evacuations. Research to develop and integrate needed knowledge on special evacuation planning needs for fast moving events cuts across a range of physical, technological, and social sciences. For example, we lack physical studies of risk for some hazards on which planning must be based. Additionally, it is not known what special emergency information requirements are needed for a population that must move quickly, or if even special information schemes could encourage quick response. Hazard-specific studies are in order to determine differences in quick response evacuations and to identify alternative fast evacuation strategies; for example, climbing canyon cliffs to escape mountain flash floods. Finally, technical and physical knowledge about risk must be integrated with social science knowledge about quick response to provide a basis for drafting special planning needs and technical assistance for fast-moving events.

ES 2.3 EVACUATION PLANNING FOR CONCURRENT HAZARDOUS EVENTS

Integrated emergency management cannot ignore concurrent hazards that can strike communities at the same time. Recent history catalogues many examples. The 1971 San Fernando Earthquake, for example, saw the need for a large evacuation of people at risk because of a potential dam failure. Additionally, a severe storm in California recently was the cause of a spill of hazardous material and precipitated an evacuation during the storm. Insufficient knowledge exists to catalogue and identify unique problems created by concurrent hazardous events on which to mount sound preparedness plans. Comprehensive investigations of concurrent hazards are in order, and these should carefully distinguish between two classes of concurrent events. First, concurrent hazards can be linked; one event may cause another, and these are not uncommon. These may occur simultaneously, or with one subsequent to the other. Second, concurrent hazards may be independent of each other, and these are uncommon with, more often than not, low statistical odds. A basis must be developed to distinguish between these types, identify which concurrent hazards are

realistically planned for, and identify unique planning problems for concurrent hazards and how to take them into account in the general planning process.

ES 2.4 HUMAN BEHAVIOR IN EVACUATIONS

The key to a successful evacuation is getting the people who are at risk to move to an area that is safe. Consequently, the bottom-line in evacuations is understanding, planning on the basis of, and implementing the lessons available from the social sciences about public response to evacuation advisements, orders, and public risk information in emergencies. Knowledge about public evacuation behavior is broad; however, it is the result of a piecemeal effort that pulled together the findings of divergent pieces of research involving varied hazards and using somewhat different research designs, methods, approaches, and models. Consequently, we have no systematic evidence to suggest, for example, that differences in hazards make a difference in public response on which to fine-tune evacuation planning. What is needed is a cross-hazard investigation of public evacuation behavior using state-of-the-art research designs, methods, and theoretical models to reveal the commonalities and differences in public evacuation behavior. Such a cross-hazards investigation would facilitate more accurate evacuation planning.

ES 2.5 ACCURACY OF EVACUATION TIME ESTIMATES

Currently, evacuation time estimates are derived from a number of different models and modeling procedures. These estimates are used to meet regulatory requirements, to prepare plans, to understand the timing of evacuation decisions, and to determine the effectiveness of evacuation as a protective action strategy. Evacuation time models' accuracy has been challenged in hearings regarding nuclear power plant licensing, in critiques of large-scale evacuation planning, and to a lessor degree in development of hurricane response plans. The major issues regarding these models are threefold.

First, different models are used for different hazards and for different geographical regions. These differences are not based on special geographical features or on different hazard characteristics, but on different researchers or contractors. A more systematic and coordinated approach under an integrated framework would be desirable.

Second, the assumptions made by various models and the variables they include and exclude are largely unarticulated across model type. It would be useful to understand the possible biases and sources of potential errors created by model assumption and structure.

Third, current models lack validity, that is, a comparison of their predictions with real-life experience. To our knowledge, no attempt has been made to compare model results with actual times derived from an

emergency evacuation. As a result, the errors in the evacuation time estimates are largely unknown.

ES 2.6 REENTRY AFTER EVACUATION

Evacuation is too often viewed as a singular act--movement of people out of an endangered area to one of safety. It is actually a process that includes other decisions and moves. Reentry of the evacuated population into the evacuated area is an issue faced in every evacuation; there are few permanent evacuations. Reentry is not a straightforward affair, and it can be riddled with problems and risks. For example, the recent evacuation of communities in the Carolinas because of Hurricane Diane saw some towns reinhabited prior to landfall of the hurricane. The Three Mile Island evacuation was somewhat confused over when reentry would be appropriate (e.g., when risk was over). The reentry of Livingston, Louisiana, after the Illinois Central Gulf Railroad derailment and hazardous waste fires was on-again/off-again for several weeks. The gaps in plans over reentry are obvious and great, as are behavioral studies to investigate issues and problems of reentry on which a planning effort could be based. It is not clear why or how plans should address reentry, nor how or what guidance should be given to those who develop evacuation plans. Integrated emergency management must address reentry systematically; to continue to slight this issue would be to ignore how best to keep evacuees who are safe from subjecting themselves to the risk they have just avoided.

ES 2.7 SPECIAL POPULATIONS PLANNING NEEDS

Special populations are groups of people whose needs may not be met by general evacuation planning. These populations may be concentrated in prisons, hospitals, schools, nursing homes, and other institutional populations, or dispersed such as nonambulatory, deaf, mentally retarded, or foreigners. Some populations can possess characteristics of both, for example, tourists. Some research has been conducted on the problems of evacuating special populations, and more is currently underway. This knowledge, however, is somewhat dispersed and may not be readily accessible to evacuation planners--it should be identified and consolidated. In addition, ways in which it can be presented and adopted into evacuation plans should be explored. Existing research may not address all logistical issues of moving special populations. Practical planning guides for evacuation resource need and plan implementation would be beneficial to local planners.

ES 2.8 LIABILITY FOR EVACUATION

There is widespread concern among emergency managers about their liabilities when ordering of an evacuation. Their concerns include liability for damages incurred if no disaster occurs, liability for damages if no evacuation is ordered, or liability for damages if the

evacuation order is late or covers an inappropriate area. The problem associated with such concerns is not who eventually would win litigation of such claims but rather if these concerns might interfere with making sound evacuation decisions based on technical criteria and experience.

If liability or perceptions of liability act as a constraint to evacuation or affect evacuation decisions, then it would be desirable to take actions to remove those constraints. This would involve improving the understanding about how emergency managers make evacuation decisions in general and, specifically, how liability affects decisions. Second, this would involve additional work on the grounds for liability and actions that could remove liability without threatening the rights of the public.

ES 2.9 UNCERTAINTIES IN DECISION-MAKING

Deciding when and where to evacuate in the face of an impending disaster is a thorny issue for most hazard situations. Usually there are some uncertainties involved. For nuclear accidents, source terms may be incorrectly estimated and winds may shift. For hurricanes, the 24-hour forecast error is plus or minus 100-125 miles. Such uncertainties create several planning or decision dilemmas for planners and officials.

First, evacuation zones are predetermined; however, it is unclear whether or not worst-case assumptions should be used in delineating evacuation zones. What constitutes a reasonable planning basis needs clearer definition.

Second, as pointed out under liability, we have a poor understanding about how local officials make evacuation decisions. Improving that understanding would help to provide better guidance for decision-making.

Third, prescriptive decision tools are being developed to aid decision-making. It is not clear how these tools will be used, whether they will result in better decisions or even if they will be adopted. An assessment of prescriptive decision tools, including articulation of their biases and limits and investigation of their use, seems warranted. Furthermore, if more tools are developed, across-hazard differences in tool applicability and tool flexibility for multi-hazard use may require investigation.

ES 2.10 ADOPTION OF INTEGRATED EMERGENCY MANAGEMENT SYSTEMS

During the past decade, our knowledge about evacuation principles has grown, along with out ability to plan successfully for the effective implementation of evacuation plans. At the same time, this information has been widely disseminated and shared with state and local users, as well as members of the private sector. The current state of these users' adoption of this evacuation planning information is not fully known. It is not known, for example, the degree to which the cross-hazard emergency

management approach has truly replaced hazard-specific approaches in local and state entities. More importantly, if the approach has had a slow start in some places, the constraints to its adoption have not been clearly identified so that efforts could be made to remove them. Additionally, existing knowledge may not be fully taken advantage of on all fronts where it could be used. For example, we know what and how emergency public information and warnings should be presented to facilitate a public evacuation, but we do not know the extent of full adoption in local evacuation plans. Work must be done to determine how to better assist local and state entities in implementing state-of-the-art evacuation planning and its full adoption in local evacuation plans.

ES 3.0 IMPROVING EXISTING PLANNING USING CURRENT KNOWLEDGE

Several steps can be taken to improve existing evacuation planning, independent of the development of new knowledge. The most significant is the adoption of a systematic method for developing a plan such as the process described in the hurricane program. This involves identifying the nature of threats and their geographical distribution, estimating the time available from detection of the hazard until the point where evacuation is not feasible, calculating how long it will take to evacuate, and developing guidelines to implement an evacuation based on these estimates and other relevant data. The full details of this process are outlined in Chapter Two. This, however, can be implemented as a relatively simple procedure or fairly complex one depending on the seriousness of the threat and available resources or expertise. Even if it is a simple effort, the benefits still can be significant because planning will have led officials to a better understanding of the decision-making process.

The second step to improve the effectiveness of evacuation planning is to advance the application of existing knowledge of state-of-the-art hazard warning and emergency communication systems. Poor or problematic evacuations are often due to the failure to notify the public at risk or to provide good information. Much is known at the present time about how to design good warning systems. This knowledge has not been systematically applied in the development of plans and operating procedures. Better warnings have had a dramatic impact on reducing fatalities from hurricanes; further improvements are still possible, and for a number of other hazards, much could be done to increase citizen compliance with protective action recommendations, including evacuation.

Third, evacuation plans can be improved to better meet the needs of special or institutional populations. Although the technical basis for evacuating special populations still needs improvement, identifying the means and resources needed to evacuate institutions in high risk areas is certainly feasible. This is often done after problems or near misses are experienced. In addition, developing mechanisms for more effective communication with minority or other populations who are reluctant to evacuate is also possible but usually ignored. Improvements can be made but are often not politically salient.

Finally, developing more effective organizations to implement evacuation plans and make evacuation decisions is feasible at all levels of government. This can be done with little or no expenditure of additional resources in many cases but may involve redirecting planning efforts. This will involve, however, the development of new planning guidance and training materials that will incorporate existing knowledge of organizational effectiveness in planning and emergency response.

EVACUATION: AN ASSESSMENT OF PLANNING AND RESEARCH

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ABSTRACT

The purpose of this research was to assess issues and criticisms of evacuation planning for all hazards under an integrated emergency management concept and to review research that addresses those issues. The work identifies gaps in knowledge about evacuation planning issues and research that can address these gaps.

In the course of this research, over 300 documents were reviewed and abstracted, and key findings were summarized. Issues were identified by review of hearings, litigations, critiques, and discussions with planners and experts. A comparison of the research findings with the issues lead to the following conclusions.

Over the past decade, evacuation planning has become more sophisticated and advanced. Progress has been made in at least four major ways. First, evacuation planning for some hazards has integrated physical risk studies with quantitative evacuation traffic modeling and behavioral research to produce comprehensive planning guidance. Second, the adoption of an integrated or generic emergency management approach has bolstered and will further bolster the expediency of evacuation planning. Third, over the past ten years, most aspects of evacuation logistics have been defined and researched and, as a result, are well understood. Finally, there are indications that the local implementation of evacuation procedures has improved.

Some issues concerning evacuation planning still, however, remain unresolved. The fact is that people who could have evacuated to safety continue to die in disasters. Our research has identified ten major issues in evacuation planning that cut across hazards. First, planning for large-scale evacuations requires improvement. Second, a better understanding of special evacuation planning needs for fast-moving events is needed. Third, evacuation planning for concurrent hazardous events is lacking. Fourth, a better understanding of human behavior in evacuations is desirable. Fifth, the accuracy of evacuation time estimates should be established. Sixth, guidelines on reentry after an evacuation should be improved. Seventh, special populations planning requires further investigation. Eighth, liability for evacuation decisions should be resolved. Ninth, uncertainties and problems in evacuation decision-making need greater attention. Finally, adoption and implementation of integrated evacuation plans should be investigated.

1. EVACUATION AS A PLANNING PROBLEM

Evacuation of a group of people due to a threat or impending disaster is almost a daily happening somewhere in the United States. At some populated location a rail tank car leaked ammonia, waters from a creek threatened a suburban subdivision, or a tornado sighting was announced. Often the population evacuated in these situations is not large, and the occasion does not command national attention, but it both saves lives and puts extraordinary demands on the evacuees and emergency management officials. One form of evacuation planning is aimed at making this type of ordinary movement smooth and efficient without much societal disruption. Other situations are more infrequent, yet have occurred and will continue to present risks to communities. For example, a nuclear power plant malfunctions prompting a notification system to be activated, a load of warheads spills from an overturned truck, a volcano awakes from dormancy, a major hurricane is tracking toward the Gulf Coast, or a scientist issues an earthquake prediction.

Local, state, and federal officials may become involved in making a decision to evacuate sizeable numbers of people and then in implementing the evacuation. A second form of evacuation planning is geared toward reducing the impacts of large but rare catastrophic events. At the extreme, some evacuation situations only exist in scenario format and have never been actually experienced. A terrorist group plants a nuclear warhead in a major U.S. city such as New York or Washington, D.C. An incident in the Middle East leads to a Soviet threat of a nuclear strike against the United States. Such scenarios may tax the ability to plan for and conduct an effective evacuation. Thus a third form of evacuation planning is oriented toward unknown and perhaps unthinkable evacuation situations. These three categories of incidents are similar in that they necessitate an orderly and collective emergency response by officials and the public. Evacuation is a protective action process that may ensue because of these events or the threat of them. It may come about through a warning, or because people decide on their own that leaving would be a prudent course of action. The purpose of this study is to examine the topic of evacuation planning in the United States from a critical perspective to determine how it can be improved. This is done for all hazards for which evacuation is a legitimate protective action and under the concept of a generic or integrated emergency planning process. Evacuation is an important protective action for hurricanes, floods, tsunamis, volcanoes, hazardous material accidents, nuclear power plant accidents, and crisis situations such as nuclear war. It is also of relevance for other hazards such as tornadoes or earthquakes, although sheltering is the dominant form of protection. The generic planning philosophy promotes the development of a functional emergency evacuation plan for all of these hazards with details for those situations which require specialized considerations.

1.1 RESEARCH OBJECTIVES

Five research objectives were specified at the beginning of the project. First, the work sought to identify and present issues in evacuation planning. These issues included concerns raised by members of the general public, positions taken by political leaders, and deficiencies identified by scientists. These issues ranged from general global statements, such as the effects of planning on world military stability, to very specific concerns with one aspect of a plan such as the use of school bus drivers to evacuate student populations. Second, the work sought to identify and summarize research conducted on evacuations and to support evacuation planning. This was mainly limited to documents that have been formally published but also included the unpublished materials that we could locate and obtain. Major attention was given to the ability to generalize from specific research efforts to the concept of a generic evacuation plan. Third, the work sought to assess the various issues and concerns identified in light of research findings. Some issues are relevant in light of existing research, others are erroneous, or perhaps misunderstandings. This task is important in that incorrect assumptions adopted in evacuation plans may decrease the effectiveness of evacuation responses. Issues that cut across hazards were also identified and addressed. Fourth, the work sought to identify and analyze those issues not well addressed by existing research. It is hoped that, by legitimizing potential planning problems and deficiencies, efforts can be mounted to minimize the impacts of these issues. Fifth, the work sought to suggest how research could be used to resolve those remaining problems and issues. This includes developing ideas about the types of research needed, how it would help remove problems faced by evacuation planners, and what priorities should be given to new research proposals.

1.2 RESEARCH APPROACH

Conducting a "state-of-the-art assessment" is not governed by any standardized method other than the general premises of scientific research. With this in mind, the research was structured into five tasks.

1.2.1 Literature Review

The first task was to identify the relevant body of research pertaining to evacuations and evacuation planning. The bibliography of all research sponsored by the Federal Emergency Management Agency (FEMA) and FEMA predecessors was reviewed and all relevant documents were identified. In addition, various planning guides relevant to evacuation were obtained from FEMA. Other evacuation literature was identified based on recent evacuation studies (Quarantelli, 1980; Perry et al., 1981; Sorensen and Richardson, 1984; Mileti, 1975; Drabek; 1986; 1983; Rogers and Nehnevajsa, 1984). In addition, discussions were held with

various experts in the field to identify materials not easily accessible.

1.2.2 Analytical Framework

Task two was the development of an analytical framework to guide the research effort. The framework serves as a heuristic to aid in sorting information contained in the research literature and to help identify generic issues and problems. The components are listed in Table 1.1. "Hazard Characteristics" refers to the event being studied or researched. Relevant dimensions of hazards that may affect evacuation planning include the size of the area at risk, the speed of onset of the event which affects the time available for decisions and population movements, the potential destructiveness of the event, and the type of causal agent. "Warning Characteristics" refers to the nature of the warning effort to support evacuation. Relevant factors include the actual amount of lead times and variability in those times, the nature and level of effort placed in the warning effort, and the style and content of warnings. "Social Characteristics" refers to population and human factors which may influence behavior. Factors such as previous experiences, presence of special populations (non-English speaking for example), or unique geographical settings are included in this category. "Organizational Characteristics" refers to the infrastructure surrounding the evacuation effort. Relevant factors include the level and type of evacuation planning and general quality of emergency response planning, the level of staffing and personnel available for planning and response, and the particulars of equipment needs and supplies. "Response Characteristics" refers to the implementing stage of evacuation. Relevant factors include the size of the evacuating population, possible or intended destinations, travel modes, risks encountered in evacuating, and other feasible protective actions. Taken together all of the factors in the analytical framework helped to shape the work conducted in the next task. This framework also serves to organize the evacuation planning issues presented in the next chapter and to analyze those issues in light of research findings. The summary of those findings by each of these five factors is presented in Chapter 6.

1.2.3 Abstracting and Coding

Information was synthesized from the research literature in two ways. First, for every study identified, an abstract was prepared. These ran from about 200 to 1000 words in length depending on the size and complexity of the document. The abstract describes the study topic, approach, and general contributions. When a document covers more than just evacuation, the abstract emphasizes the evacuation-related materials in the context of its total scope. In addition, specific findings have been included in point form following the text of the abstracts when appropriate. These abstracts are published in a companion document (Vogt and Sorensen, 1986). Based on the concepts

Table 1.1. Analytical framework

Physical hazard characteristics
Ability to specify hazard parameters
Ability to detect hazards
Hazard dimensions
Threat or risk of hazard
Warning characteristics
Ability to alert
Style and content of warning
Social characteristics
Risk perceptions
Ability to receive warnings
Ability to evacuate
Organizational characteristics
Planning and plans
Training of evacuation personnel
Technical basis for evacuation planning
Response characteristics
Constraint to evacuation
Public behavior
Emergency worker behavior
Evacuation as a public good

developed in the analytical framework, a coding form was developed to characterize all empirical studies. The major purpose of the codings was to allow an assessment of the robustness of and ability to generalize the research findings. The coding form is reproduced in Appendix A.

1.2.4 Critical Issues Identification

The fourth task was to inventory potential issues surrounding evacuation planning across the range of hazards covered by this research. This was accomplished in several ways. First, some issues emerged from the research literature itself, particularly from accounts of evacuations which detailed various problems encountered during the events. Second, newspaper articles from the AP and UPI concerning evacuation planning for nuclear and chemical incidents for the last five years were reviewed. Third, various written critiques of evacuation planning were reviewed. Fourth, administrative and civil litigation concerning evacuation and planning was reviewed. Fifth, Congressional Hearings that covered evacuation were reviewed when identified. Finally, project staff discussed issues with FEMA staff and state and local planners to gain a picture of practical evacuation problems. An inventory of issues raised is presented by hazard in Appendix B. That a point is listed in this inventory does not suggest it is valid or meaningful but reflects a statement or position revealed by one or more of the above efforts.

1.2.5 Integration

The final task was to compare the issues identified in the previous task with the knowledge and findings in the research literature. This was done to identify the areas in which evacuation planning suffers from inadequate research and to determine which issues are valid and could be potentially resolved by further efforts. The results of this task summarize weak areas in evacuation planning as they exist cross-hazard and present a long-range research agenda to support evacuation planning under the integrated planning concept. A schematic diagram outlining the timing and relationships among tasks is shown in Fig. 1-1. To maintain some objectivity, the development of the issues inventory (Task Four) was conducted separately from the abstracting and coding (Task Three). The integration of these two tasks (Task Five) results in a relatively objective assessment of the issues.

1.3 EVACUATION AS A SOCIAL PROCESS

Evacuation is the collective mass movement of people and property away from a source of potential threat of injury, death, or damage and the return after the threat dissipates. As defined, evacuation is not a stimulus/response type of behavior. It is viewed as a process by which people form images of threat or risk and come to act upon the available

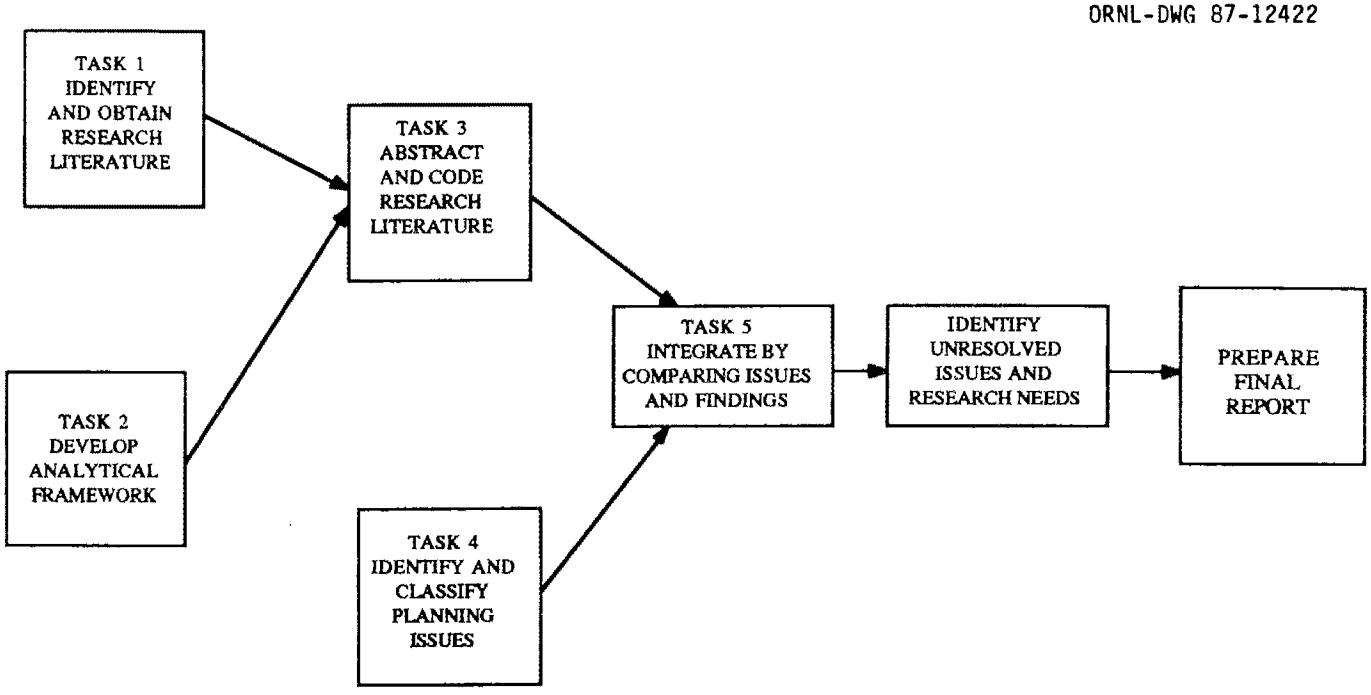

Fig. 1-1. Project tasks.

information in setting a course of action or inaction. Evacuation is also used here to describe movements of significant groups of people. While it is inappropriate to define a precise threshold of how many people must leave to constitute a collective movement, it is clear that it is not a person escaping from a burning car, or a person taking evasive action from an aggressive person (Wenger, 1985b). Evacuations are sometimes distinguished as to whether they are precautionary or protective. Precautionary evacuations are defined as those in which people move away from a potential threat that fails to materialize. Protective evacuations are defined as those in which people move away from a threat that occurs. In part this distinction is somewhat artificial in that both types are conducted to protect the public, only in the former a post-analysis shows it was not needed. Often what starts as a precautionary evacuation becomes protective when the event does occur.

It is rare that evacuations are carried out forcefully or by police order. Most evacuations involve some degree of human judgements in which members of the public are given some freedom of choice. The degree to which public officials and emergency or law enforcement personnel impose a sense of force to evacuation may range from mild recommendations to forceful removal. The norm is somewhere in between. Policies and laws on this matter as well as who has the authority to recommend an evacuation vary according to state and community. As defined, evacuations are round trip events. They involve movement away and movement back into the area at risk. This latter facet is frequently overlooked or not emphasized in the conceptualization of evacuation research. Evacuations involve a temporal as well as a spatial nature. Some evacuations, such as for hazardous material incidents or volcanic eruptions, may turn into an extended evacuation or a semi-permanent relocation. Ultimately this may lead to permanent migration. The exact time threshold between evacuation and permanent population migration, however, has not been defined.

Drabek and Stephenson (1971) identified four types of evacuations. An evacuation by invitation occurs when someone outside the area at risk provides the means or impetus for someone at risk to leave. Evacuation by decision or choice involves individuals processing warning information to arrive at a decision to leave and then take action. Evacuation by default involves behavior dictated by actions other than seeking safety from the hazardous event. Evacuation by compromise is characterized by people following orders even though they do not desire to leave.

Perry (1985) differentiates four types of evacuation using the concepts of the timing of the movement and the length of the stay. By categorizing the two dimensions into dichotomous variables: pre-impact/post-impact/short- and long-term and, developing a two by two matrix based on these distinction, the four types are identified. "Preventive" evacuations are short-term movements prior to impact. "Protective" evacuations are pre-impact movements over a long-term time frame. "Rescue" evacuations are short-term movements of people out of

the impact zone immediately after the impact. "Reconstructive" evacuations are the long-term movements that occur after the impact period. Perry also distinguishes among voluntary and coercive evacuation. Evacuations involve a series of organizational and individual or family decisions. At the organizational level the following decisions are frequently made in most potential evacuation situations:

1. whether to notify,
2. whether to evacuate,
3. areas to evacuate,
4. when to issue warning,
5. channel to communicate,
6. nature of recommendations and instructions,
7. content of evacuation notifications, and
8. when to return.

At the individual or family level comparable types of decisions include:

1. whether to evacuate,
2. when to evacuate,
3. what to take,
4. how to travel,
5. route of travel,
6. where to go, and
7. when to return.

The nature of these decisions helps to illustrate that evacuation is a complex social process and not a stimulus/response event. While these decisions are being made, considerable communication and social interactions occur. As a result evacuation planning is not a perfect science and at times is a highly politicized topic. In the next chapter we review the issues that have emerged from experiences with evacuation planning.

2. EVACUATION PLANNING ISSUES

2.1 INTRODUCTION

The purpose of this chapter is to identify and discuss issues that have been raised concerning evacuation in the event of various hazards. Some issues have been raised by researchers and the scientific community, others by concerned citizens, and still others by critics using evacuation issues as a means to address other social controversies. Some of these issues have generated significant public concern and debate while others have been academic issues. These issues and beliefs are important because they represent challenges to the feasibility and effectiveness of evacuation planning, and some can potentially provide the means to improve evacuation implementation if addressed. The extent to which these issues can be eliminated or dismissed on the basis of current physical and social science knowledge is important both for assessing the viability of evacuation as a protective action strategy and for eliminating unneeded research. Where valid, it is important that evacuation planning incorporate knowledge concerning the issues. The extent to which an issue is unresolvable is also important for establishing agendas for new research on evacuation. Where invalid, examination of the issues is important to prevent erroneous issues from interfering with sound evacuation planning or even from leading to poor evacuation plans.

The issues identified in this chapter come from a variety of sources including research reports, critiques of evacuation planning, editorials, transcripts of hearings, litigations, and newspaper articles. Issues were summarized in a point form for each hazard. A conceptual typology of five major issues was induced from these lists, and a hierarchy of issues was specified under these five categories. The issues were then systematically reviewed, and the hazards affected by each issue were identified.

The major categories of issues and their definitions are as follows:

- Physical Hazard: the nature of the threat including the definition of areas at risk, lead time, location, magnitude, probability, and type of causal agent.

- Warning: the nature of the information dissemination process including the ability to notify and provide a warning message, the quality of the information, and timing of the message delivery.

- Social: the pre-evacuation population attributes including psychological, demographic and social characteristics.

- Organizational: the attributes of emergency preparedness and response organizations.

- Response: the behavior of people and organizations in an evacuation.

2.2 PHYSICAL HAZARD ISSUES

2.2.1 Uncertainty in Ability to Specify Hazard Parameters

The ability to make evacuation decisions depends on knowing the nature of the hazard creating the threat. This includes the following dimensions:

1. location,
2. timing,
3. magnitude,
4. effects, and
5. secondary hazards.

2.2.1.1 Location

The ability to specify the location of hazard impacts is critical to good evacuation planning because officials need to know which areas to evacuate, given the specific threat. This question has been raised as a planning problem and issue for hurricanes, earthquakes, tsunamis, floods, tornadoes, nuclear power plant accidents, hazardous material accidents, and for nuclear crisis situations.

Hurricanes have very uncertain points of impact. At 48 hours before landfall, errors are large (250 miles or about a 600- to 700-mile stretch of coast). At 24 hours before estimated landfall, the forecast error for the storm is about 100 to 125 miles. This translates into a potential evacuation zone of 300 miles along the coast. It is estimated, however, that it will prove necessary to evacuate only a fraction of this area to preserve public safety. Thus, the decision dilemma for local officials is whether or not to order an early evacuation of a 300-mile-long area of the coast knowing that, 75 to 85% of the time, they will be evacuating unnecessarily. Furthermore, this decision is confounded by the largely unknown cost of evacuating large areas and the perceptions of liabilities for being wrong for either evacuating unnecessarily or failing to evacuate prudently. At 12 hours, the forecast error is reduced to less than 50 miles, but it may be too late to order and implement an effective evacuation, because winds and surge may prevent vehicular movement during about three hours before landfall. Even at 12 hours, the storm may suddenly veer and hit an area outside the forecasted landfall zone.

Since earthquake prediction is a relatively undeveloped science, the ability to specify the location of a quake and the areas it will

affect is highly uncertain. Existing instrumentation does not cover large geographic areas that are potential earthquake risks. Areas in the midwestern and eastern United States have the potential for earthquakes, but the ability to predict in these locations is highly uncertain. In areas being studied by geoscientists, identification of hazardous structure and earthquake-prone areas could provide the basis for selective evacuation should the scientists issue a prediction of an impending quake.

In tsunami evacuation planning, hazard risk zones are defined by modeling historic tsunami run-up heights. In some locations the coastal floodplain definition is used as a surrogate measure. These definitions have not been developed for all risk areas. In some cases where tsunami run-up zones have been estimated or recorded, their accuracy has been challenged.

Areas at risk from floods are defined under the hazard mapping program of the National Flood Insurance Program (NFIP). The accuracy of these maps is largely acceptable as a basis for evacuation planning, but in some locations they may underestimate the area at risk due to development in upstream water basins.

The tracks of tornados cannot be predicted, given current knowledge about storm behavior. Funnel clouds cannot be tracked on conventional radar systems. Due to the lack of ability to forecast tornado tracks, large areas are defined to be at risk from a storm capable of spawning a tornado. This practice has received some public criticism.

The ability to specify volcanic hazards for evacuation became an issue following the eruption at Mount St. Helens, Washington, in 1980. Critics raised the issue in conjunction with the lateral blast which covered a larger area than anticipated. Furthermore the resulting ashfall covered areas considered by public officials to be safe from volcanic risks.

The area at risk for a nuclear power plant accident is a function of source term and meteorological conditions. There is some controversy at present about the size of the source terms and the area they would affect. The Chernobyl reactor accident in the Soviet Union (1986) has raised new issues about areas at risk because the area impacted was much larger than expected.

The definition of areas at risk from hazardous materials accidents has become a major issue since the 1984 accident in Bhopal, India. Since that event, critics have challenged companies to define the areas that can be impacted by an accident and to specify the types of potential chemical releases.

Many critics of evacuation planning for nuclear war say that it is impossible to identify risk areas because everything is at risk from the radiation hazard and that there will be no safe areas. Others have challenged the targeting scenarios used to develop plans.

2.2.1.2 Timing

Uncertainty in the timing of an event is an issue in evacuation planning because it effects the ability to decide when to evacuate. The dominant issue for hurricane evacuations is the timing of official evacuation orders. This is problematic due to the long lead times that have been estimated to be required to evacuate coastal areas at risk. Not only is location uncertain at 24 hours but so are time of landfall and storm intensity. The average time error may be around six hours. Storms may also intensify rapidly or reduce in intensity thus affecting timing of impact.

A major issue concerning earthquakes is the ability to specify an accurate time window in which the earthquake will occur. Scientists are sure that a major earthquake will occur in Southern California during the next 20 years, but they cannot be more specific.

A constraint to effective volcano evacuations is the ability to predict the time of major eruptions. The lack of this ability means that evacuations may be ordered prematurely during periods when evidence suggests an increased probability of eruption. This has been criticized by residents and other persons who have economic interests in the areas at risk.

2.2.1.3 Magnitude

Issues regarding the prediction of the magnitude of impact covary with issues on prediction of the area at risk when the magnitude of a hazardous event determines the size of the area impacted. The above discussion of issues regarding the areal definition of threat are applicable to the definition of magnitude and will not be repeated. In addition, the following issue is relevant for flash floods. The volume of water coming from any storm is difficult to accurately predict. This has been raised as an issue in arid environments where the volume of flood water has been underestimated in previous floods.

2.2.1.4 Impacts

Uncertainties regarding the effects of radiation are an issue in evacuation planning for nuclear power plant accidents. Critics say that the lack of knowledge about the effects of radiation on human health, referred to as dose response, creates uncertainty in making a protective action decision.

2.2.1.5 Secondary and multiple hazards

Volcanoes, hurricanes, and earthquakes all have multiple hazards for which evacuation is a viable component of protective action. The

ability to detect and specify the nature of these hazards is important to effective evacuation planning and public safety.

Tornadoes are spawned by most hurricanes as they move inland. The tornadoes may cause more casualties than the storm itself, yet emergency response remains concentrated on the direct hurricane impacts, such as coastal flooding, and not on the tornadoes.

Earthquakes can trigger landslides, dam failures, nuclear power plant accidents, hazardous materials releases, gas line ruptures and other secondary hazards. Knowledge on the conditions that might cause earthquakes to create such hazards is not adequate.

Associated with volcanic eruptions are numerous threats including mudflows, pyroclastic flows, blast, lava flows, and ashfall. These can create secondary threats such as reservoir failure or overtopping and snow-melt-induced flooding. Following the eruption of Mount St. Helens, criticism was that officials did not adequately consider all of the secondary effects in their emergency response.

2.2.2 Uncertainty in Ability to Detect Hazards

Inability to recognize that a threat exists makes it impossible to issue an evacuation warning or to encourage people to move away from the threatened area. Two issues have been identified in this regard:

1. scientific ability, and
2. lack of physical cues.

2.2.2.1 Scientific ability

Some hazards pose difficulties for using evacuation as a protective action because the onset of the hazard is difficult to detect, let alone specify. Many dams that are potentially unsafe are not monitored, and failure would be difficult to detect except by observation or measurement of the increased flow of water which may come too late to effectively evacuate areas below a dam. A major issue for tsunamis (both local and distant) concerns false alarms. The problem of detection is more severe for local tsunami events; seismic activity, the only current means of timely detection, may only generate a tsunami on a rare occasion, but it is the only warning that can prompt immediate evacuation. Distant tsunamis can be more readily detected, but whether or not and exactly where effects will occur is not well understood.

Detection technology and techniques for measuring harmful amounts of chemicals or other hazardous materials are not available or installed at locations where accidents can occur. It is, therefore, difficult to detect a release of hazardous materials until humans are exposed. Recently, chemical plants have been criticized for the use of "human canaries" to detect leaks.

2.2.2.2 Physical cues

Critics of nuclear power hold that because radiation is invisible, the public at risk will not be able to see the hazard and, therefore, will not take protective action. An additional issue is that people who do evacuate will not know where radiation exists and may be exposed during an evacuation.

2.2.3 Hazard Characteristics Constrain Evacuation Effectiveness

The speed of onset of some hazard events is a major problem for effective evacuation for a subset of hazards. Without adequate lead time, it will be difficult to effectively move threatened populations. Scientists may detect a large earthquake hours to minutes before occurrence. Floods can have very rapid onset, and there may be only minutes in which to issue a warning before they become hazardous to human safety. Local tsunamis generated immediately off-coast have lead times of five to ten minutes before impact. Explosive-type volcanoes may have no lead time for explosive effects and very short lead times for other effects such as mudflows and pyroclastic flows. Many accident scenarios for hazardous materials have lead times ranging from zero to 30 minutes. One attack scenario for a nuclear crisis estimates a 20-minute lead time after a strike is initiated.

2.2.4 Planning Increases the Threat or Risk of Hazard

Critics have argued that planning increases the likelihood of nuclear war and nuclear power accidents. A related issue that is more relevant and of greater importance is whether evacuation plans increase the threat or consequences of a hazard if it occurs.

2.3 WARNING ISSUES

2.3.1 Uncertainty in Ability to Alert

Most people would evacuate after receiving a warning to do so. The inability to warn people to evacuate results in greater exposure to risk. The following issues deal with this inability to alert populations at risk:

1. lack of warning systems,
2. timing of warnings,
3. information withholding,
4. inadequate communication,
5. risk not revealed,
6. warnings not issued to certain groups, and
7. sirens not heard.

2.3.1.1 Lack of warning systems

Critics have argued that existing warning systems are not adequate to inform the public to evacuate. For example, few facilities that use dangerous quantities of hazardous materials have a warning system that could alert the public of a release of materials that would affect off-site populations.

Due to funding problems, few emergency plans have been developed for public dams, even though federal policy requires them. Virtually no plans exists for dams that are privately owned. In the United States, only a portion of the communities that have the potential for flash flooding have installed a local flash flood warning system to support evacuations.

2.3.1.2 Timing of warnings

The speed of onset of some hazards dictates that warnings be issued in short time frames. Critics of evacuation plans for these hazards claim that warning systems are not in place to provide timely information; therefore, evacuations are not feasible.

2.3.1.3 Warnings and information will be withheld

Public doubts have arisen regarding persons and organizations involved in the evacuation warning process withholding information from the public. This issue has surfaced in connection with earthquakes, nuclear power, and hazardous materials. Some people feel that should an earthquake be detected, the information would not be made public for fear of causing alarm. Opponents of nuclear power have litigated that utilities would try to cover up an accident instead of reporting it to local officials because of their vested interest in keeping the plant operating. Large chemical companies have been criticized for not warning the public following releases of chemicals.

2.3.1.4 Inadequate organizational communication

Poor abilities to communicate constrain issuing a warning for an evacuation. The National Weather Service (NWS) has identified poor communications as a problem in the case of flash floods. This issue has been litigated at several nuclear power sites. It is also beginning to emerge as an issue for hazardous materials accident planning.

2.3.1.5 Risks not revealed to warning organizations

Intervenors in nuclear power licensing hearings claim that the true risks of an accident are not provided by companies in an attempt to downplay public opposition. At sites where hazardous materials are

stored, companies withhold information on the chemicals to protect proprietary information on production processes.

2.3.1.6 Warnings will not be issued to transient populations

Transients are defined as people in an area at risk that live somewhere else. Typically transients are people traveling through an area or vacationers. In some hurricane situations, it would be difficult to communicate sufficient warning information to large tourist populations (e.g., in the Florida Keys), so they could evacuate effectively. Litigation over nuclear power plants, such as Seabrook in New Hampshire, has focused on the issue of the difficulty in warning people in recreational areas and seasonal tourist populations.

2.3.1.7 Siren systems cannot be heard

This issue concerns conditions under which sirens are not heard by people at risk. At the Shearon Harris Nuclear Power Plant, intervenors maintained that sirens cannot be heard inside residences at night when air conditioners are operating. Following the Bhopal, India, accident citizens in Institute, West Virginia, complained that sirens were always sounding at chemical plants, so no one listened to them.

2.3.2 Information Constrains Evacuation

People may receive a warning, but the information in that warning may not lead them to evacuate or to go to the best location. Specific issues include the following:

1. special terminology,
2. probabilistic information,
3. multiple messages,
4. inadequate content,
5. credibility,
6. frequency, and
7. siren use.

2.3.2.1 People don't understand warning special terms

The NWS uses special warning terminology to designate the appropriate level of preparedness and vigilance for a possible tornado, hurricane, or flood threat. These terms include alert, watch, and warning. Some people feel that these terms are ambiguous and that people do not understand the differences between them.

2.3.2.2 Probabilities are not understood or are misinterpreted

An argument against using probabilities in hurricane warnings was that it would discourage evacuation because the probabilities would always seem low. In developing policies regarding earthquake predictions, scientists maintain that people won't understand the probabilities in a prediction.

2.3.2.3 Multiple messages create confusion

In recent hurricanes, the National Hurricane Center, state officials, and local government authorities gave different advice about evacuating which created some confusion. At Mount St. Helens, public officials felt that the media's sensationalization of the volcanic threat created problems for evacuating threatened populations by emphasizing topics such as convergence behavior and people refusing to leave.

2.3.2.4 Warning content is inadequate

The messages telling people to evacuate from hazardous areas may not be adequate. In a recent flash flood in Cheyenne, Wyoming, a post audit found that messages may not have been emphatic enough to prevent people from reentering flooded areas. Intervenors charge that sample messages prepared by planners for nuclear power accidents are inadequate. Critics of evacuation planning for nuclear crisis charge that no amount of information will convince people that a war is imminent.

2.3.2.5 Warning credibility

People will not believe warnings that an evacuation is needed if they come from organizations with low credibility. It has been argued that companies that operate nuclear power plants are not a credible source of warning information. In a nuclear crisis situation, some critics maintain that people will not believe that a crisis exists because no warning will be credible.

2.3.2.6 Frequency of information

Following Hurricane Diana, people thought that information was not given out frequently enough by the NWS. In many emergencies the public complains about not receiving enough information to make appropriate evacuation decisions.

2.3.2.7 People do not understand sirens

In tsunami-prone areas, people have complained that they cannot distinguish between the different siren signals that depict the onset of different hazards. In nuclear power accidents, critics maintain that people will think the sirens are false alarms or tests; therefore, they will not respond when a real emergency occurs.

2.4 SOCIAL ISSUES

2.4.1 Social Factors Color Risk Perceptions

At issue is that pre-emergency risk perceptions bias human evacuation behavior in case of an emergency. These issues include the following:

1. mitigation measures,
2. prior experience,
3. depersonalization of threat,
4. fear of radiation,
5. denial of hazard,
6. denial of need for preparedness, and
7. false alarms.

2.4.1.1 Mitigation measures create a false sense of security

People may believe that they are protected by some type of engineering mitigation structure which leads them to believe they do not need to evacuate. For hurricanes, this may be a sea wall such as the one on Galveston Island, Texas. In flood plains, these structures may be dams or levees. In a dam failure situation, people living below the dam may fail to consider that the dam can overtop or collapse.

2.4.1.2 Experience

At issue is how prior experience with an evacuation affects subsequent evacuation behavior. This issue has been chiefly raised in the context of hurricane and tornado planning. Some officials feel that experience with an event creates overconfidence in dealing with subsequent events. Others maintain that people who have experienced an evacuation event would be more likely to evacuate if advised to do so. Another related issue is that of false alarm (see below).

An issue in nuclear crisis planning is the lack of experience with a nuclear war or conventional war. Critics assume that, since a nuclear war has never been experienced in the United States, response would be different from all other hazards. Planners tend to assume that the population would not respond to an evacuation based on any previous war-related experiences.

2.4.1.3 Depersonalization

Depersonalization has been raised as an issue for earthquake prediction planning. It is believed that while people in California know there is a threat they would discount their personal risk in the event of an earthquake prediction because their house or neighborhoods would not be affected.

2.4.1.4 Fear of radiation

Nuclear power evacuation planning critics feel that radiation is a unique threat and that, because of the great fear of radiation, the public would behave differently when warned to evacuate. The differences cited have included panic; a psychic numbing, rendering people incapable of evacuating, and chaotic flight behavior.

2.4.1.5 Deny the hazard exists

This issue involves the public perceiving that an event is not hazardous or cannot cause harm. In flash floods, it involves possible perceptions that waters flowing at high velocities are not dangerous. A second example involves people who reside near hazardous material sites and believe that nothing harmful is used or produced.

2.4.1.6 Lack of preparedness

The lack of preparedness has been raised as an issue for nuclear war emergency planning in the context of lack of support for or opposition to such planning. The feeling is that people who do not believe in or who oppose planning would not follow an evacuation order or recommendation if one were issued.

2.4.1.7 False alarms

The false alarm issue is raised for many hazards including hurricane, earthquake, tsunami, tornado, nuclear power, and nuclear crisis. The basic issue is that people who evacuate unnecessarily will not evacuate in a future event. The extreme case of this is for a nuclear crisis. Some critics feel that only one evacuation could be ordered and if that proved wrong no one would evacuate a second time.

2.4.2 Factors Color the Ability to Receive Warnings

At issue is whether social characteristics affect the way in which people understand an evacuation warning and thus lead to misinterpretation. Specific characteristics include

1. culture and ethnicity,
2. disbelief in ability to detect or predict, and
3. lack understanding of risk.

2.4.2.1 Culture and ethnicity

The issue is that evacuation warnings are not geared to ethnic, racial, or non-English-speaking groups but to the dominant population groups. As a result minority groups could be more vulnerable because they are less likely to receive or understand a warning message and, so, are less likely to evacuate.

2.4.2.2 Disbelief in ability to detect or predict

Some people do not trust the ability of scientists or other hazard monitors to accurately predict events such as an earthquake or a nuclear crisis emergency, and, as a result of their disbelief, they would not evacuate to safety.

2.4.2.3 Lack of understanding of risk

Some people do not understand the nature of risks from nuclear power plant accidents, even when told in a warning. A consequence of not understanding would be to delay evacuating and remain at risk.

2.4.3 Factors Affecting the Ability to Evacuate

The issue is that certain population characteristics constrain people's ability to evacuate even if they are adequately warned. These include

1. economic resources, and
2. special or institutional populations.

2.4.3.1 Economic resources

This issue concerns the constraint of monetary resources on the public's ability to evacuate. The contention is that some people will not evacuate because of the direct expense of leaving and the possibility of loss of income. These people are more likely to be in the lower income brackets.

2.4.3.2 Special or institutional populations

The issue is whether special populations and institutional populations require specialized assistance to evacuate. The key

parameters for an effective evacuation are the unique problems of these populations and the specific needs of the different groups or institutions.

2.5 ORGANIZATIONAL ISSUES

2.5.1 Planning Elements are Inadequate

A series of issues have been raised about the scope and content of evacuation planning for a variety of hazards. Specific issues include

1. lack of coordination in planning,
2. inadequate planning for shelters,
3. lack of plans,
4. planning for secondary hazards,
5. definition of emergency planning zones (EPZ),
6. plans for institutional facilities and special populations,
7. planning for reentry, and
8. no support for planning.

In addition, several issues are unique to evacuation planning for nuclear crisis or the CRP concept. These include

1. planning for emergency resources to support evacuees,
2. planning for medical and health care of evacuees,
3. planning for extended evacuations, and
4. planning that uses the wrong assumptions.

2.5.1.1 Lack of coordination in planning

Planning for evacuations is done by separate jurisdictions and different levels of government. This issue concerns whether or not these plans are coordinated and, if not, if the absence of coordination will lead to ineffective evacuations. After Hurricane Elena, local officials complained that the National Hurricane Center and state government officials' lack of coordination with local government authorities hindered evacuation. This type of concern has been raised for earthquake prediction and hazardous material accidents as well. In the later case, transportation accidents create coordination problems that are not well addressed by plans.

The issue of coordination of plans has developed in nuclear power plant planning where local governments have refused to participate in planning efforts for that specific hazard. Another example of this issue is the lack of coordination of planning for a nuclear crisis situation, particularly between high- and low-risk areas or with communities that refuse to develop plans to participate in relocation.

2.5.1.2 Inadequate planning for shelters

Three shelter issues have been raised for different hazards. First is the feasibility of vertical evacuation in hurricanes. Second is the ability to evacuate people to decontamination shelters in the event of contamination from a nuclear power or hazardous material accident. The third concerns the adequacy of shelters necessary for large-scale evacuations as would be required in a nuclear crisis situation.

2.5.1.3 Lack of plans

A major issue is the extent to which plans are lacking and whether a lack of evacuation plans would constrain evacuation effectiveness. This topic is raised as an issue for earthquake predictions, flash floods, dam failures, tornadoes, hazardous material accidents, and nuclear crisis situations. Since earthquake prediction is an emerging science and is largely unproven, the issue is the extent to which a community and state should plan for an emergency. Furthermore, if more specific warnings can be issued as in the case of the earthquake that has been predicted for Parkfield, California, the issue is whether or not detailed plans are needed. Many communities have no plans for infrequent events such as a flash flood, a dam failure, or a rare tornado. Even for frequent events, such as hazardous material accidents, evacuation planning is largely lacking at both state and local levels.

2.5.1.4 Planning for secondary hazards

Knowledge of such events may not be as good as desired but even existing knowledge has not been applied to developing comprehensive emergency plans that include evacuation. The three situations, in addition to those discussed earlier, are a natural hazard, such as a hurricane or flood releasing hazardous materials; a tornado, coinciding with a flash flood; and an earthquake-induced nuclear power plant failure.

2.5.1.5 Definition of emergency planning zones (EPZ)

This has chiefly been an issue at nuclear power plants, although minor issues regarding delineation of special planning zones have surfaced for other hazards. At issue is whether the size of the planning zone covers the true area at risk and whether evacuation is feasible outside the detailed planning zone because of the lack of detailed evacuation studies.

2.5.1.6 Plans for institutional facilities and special populations

This issue concerns whether or not detailed plans are needed to evacuate special populations such as the hearing-impaired or mobility-impaired, or institutional populations such as schools, hospitals, nursing homes, or correctional facilities. Second, if such plans are lacking, what information should they include. While this is an issue for all hazards, it has been raised chiefly by intervenors in nuclear power plant hearings and critics of crisis relocation planning (CRP).

2.5.1.7 Planning for reentry

Reentry has been noted as a problem in studies of some evacuations (e.g., during Hurricane Diana and the Mississauga train derailment). Issues associated with reentry include (1) deciding who should be allowed into evacuated areas before the general population and (2) managing the people who converge on the area at risk simply to observe the event.

2.5.1.8 No support for planning

This issue concerns whether opposition to planning or non-support for planning constrains the development of plans and the implementation of an effective evacuation. It has been raised primarily in the case of CRP and nuclear power plant accident planning.

2.5.1.9 Planning for emergency resources to support evacuees

This issue has also been raised for nuclear crisis situations. Critics have questioned the ability to develop plans that can guide the redistribution of resources to support large relocated populations. These resources include food, water, fuel, and other basic requirements to support subsistence living of evacuated populations.

2.5.1.10 Planning for medical and health care of evacuees

Evacuees typically include people who require special medical attention, particularly those from health care facilities but also include people who normally reside at home. Whether or not plans are adequate to support relocation of people with health problems has been raised as an issue for large evacuations (such as in a nuclear crisis). A related issue is the inadequacy of planning for mental health care needs of evacuees.

2.5.1.11 Planning for extended evacuations

An extended evacuation is one in which people evacuate and the threat lingers, creating problems for defining time of reentry. At issue is the adequacy of plans for providing information and resources to support large numbers of evacuees over long periods of time. For small-scale events with no immediate resolution of the threat, the issue is the adequacy of planning for temporary or long-term relocation, such as at Love Canal, New York.

2.5.1.12 Planning that uses the wrong assumptions

This is an issue in planning for nuclear crisis situations. Critics argue that analyses employ biased assumptions to make evacuations appear feasible. Changing the assumptions would show that it is infeasible and, therefore, an inappropriate protective action.

2.5.2 Training of Evacuation Personnel is Inadequate

Evacuations are supported by a variety of emergency personnel who often perform different tasks including warning, transport, traffic control, law enforcement and the like during an evacuation. The issue has been raised at nuclear power plants that these types of workers have not been adequately trained to support an evacuation. The issue of training has also been raised for emergency personnel such as police and fire departments responding to a hazardous materials accident.

2.5.3 The Technical Basis for Evacuation Planning is Inadequate

Another set of issues regarding planning is the lack of data or information on which to base the planning. These include

1. evacuation time estimates are inaccurate,
2. plans will lead to unnecessary evacuation,
3. organizations for developing plans are lacking,
4. organizations with responsibilities downplay the hazard,
5. knowledge not transferable, and
6. dissemination of technical knowledge is poor.

2.5.3.1 Evacuation time estimates are inaccurate

A variety of models exists to estimate the time it takes to evacuate geographical areas. Different model types are used for different hazards, and some variations are used for the same hazard. Issues have been raised about which models are appropriate to use and whether or not the results are valid. Many of the issues regarding validity involve the assumptions used in the models. Some of the major assumptions that have been challenged include mobilization time,

departure time, road capacity estimates, impacts of bottlenecks, number of vehicles used per household, impact of accidents, route selection, and effectiveness of traffic control.

2.5.3.2 Plans will lead to unnecessary evacuation

This issue has been raised for hurricanes. The current plans call for evacuation decisions to be made at least 24 hours before expected landfall. Critics say this leads to unnecessary costs and risks and that a new planning basis is needed to avoid these unnecessary costs and hardships.

2.5.3.3 Organizations for developing plans are lacking

This issue has been raised regarding fixed-site hazardous materials and their transportation. The issue is that the technical information used to define risks is inadequate for evacuation planning because there is no organization in place to develop the information, to disseminate it, or to apply it.

2.5.3.4 Organizations with responsibilities downplay the hazard

This issue has been raised for hazardous material accidents following the Bhopal, India, accident. The issue is that industry and government officials are reluctant to admit the risks of hazardous technologies because they do not want to get involved with developing plans. This is also an issue for earthquakes and for dam failures.

2.5.3.5 Knowledge not transferable

A general planning issue questions the applicability of information developed from research and experience involving one specific hazard to planning for another. Critics argue that the uniqueness of nuclear power accidents or a nuclear crisis precludes any application of knowledge derived from experience with other events.

2.5.3.6 Dissemination of technical knowledge is lacking or poor

This is an issue of not disseminating the available technical information or issuing needed equipment to implement an evacuation plan. In part, it involves cost, time, and government priorities, and can apply in the case of all hazards, to a certain extent.

2.5.3.7 Populations at risk are unknown

This has been an issue in some disasters (e.g., emergency responders may not know whom to notify nor the characteristics of the population at risk). Such uncertainties are of particular importance should a transportation accident involve hazardous materials.

2.6 RESPONSE ISSUES

2.6.1 Physical Factors Constrain Evacuation

These issues concern the possibility that the geographical characteristics of the area at risk could impede the evacuation process. These include

1. population too dense to evacuate,
2. population in areas with seasonal peaks,
3. boat traffic will interfere with island evacuation, and
4. traffic accidents will constrain evacuation.

2.6.1.1 Population is too dense to evacuate

Many people have questioned the ability to evacuate large, densely populated areas such as New York City, Miami, or Los Angeles in a timely or orderly fashion. Problems cited include lack of transportation, road capacity, traffic jams, and the other litany of issues associated with large-scale evacuations.

2.6.1.2 Population in areas with seasonal peaks

The ability to evacuate tourist and permanent populations from areas having large seasonal populations has been questioned for nuclear power plant accidents and hurricanes. Questions have been raised regarding the organizational ability to warn, transient knowledge of evacuation routes, sufficiency of shelters, behavior of transient evacuees, timing of evacuation, and traffic congestion.

2.6.1.3 Boat traffic will interfere with island evacuation

This is an issue of logistics in certain hurricane settings. Boats going up rivers to seek protection will require drawbridges to be raised. This will delay vehicles evacuating from islands, and evacuees will be trapped.

2.6.1.4 Traffic accidents will delay evacuation

Critics of nuclear power and nuclear crisis evacuation planning have said that traffic accident rates will increase in an emergency evacuation, and the excessive accidents will tie-up traffic trying to leave.

2.6.2 Public Behavior

These issues relate to people responding in a way that will jeopardize the effectiveness of evacuation. These issues include

1. holding parties instead of evacuating,
2. evacuation shadow (excessive evacuation),
3. panic,
4. convergence,
5. spontaneous evacuation,
6. aberrant behavior,
7. failure to use specially designated routes,
8. stress due to evacuation,
9. failure to obey officials,
10. failure to evacuate for long periods of time, and
11. lack of knowledge on how to evacuate.

Again a unique set of issues are found for the nuclear crisis or CRP planning:

12. taking shelter instead of evacuating,
13. not going to designated host areas, and
14. total social chaos.

2.6.2.1 Holding parties instead of evacuating

This is not a major issue, but media accounts report such behavior during hurricanes and other hazardous events.

2.6.2.2 Evacuation shadow (excessive evacuation)

This is a point of litigation at nuclear power plant hearings. Based on the experience at Three Mile Island Nuclear Power Plant (TMI), critics charge that people will evacuate from far larger areas than those officially designated. Because plans do not exist to handle this phenomenon, it is held that evacuations will fail.

2.6.2.3 Panic

Panic is defined as acute fear of entrapment coupled with attempted flight. Critics maintain that people will exhibit this type of response

to an earthquake, nuclear power accident, or nuclear crisis warning. This behavior will lead to increased traffic accidents and abnormal behavior.

2.6.2.4 Convergence

Convergence is the movement of people and vehicles into the area being evacuated for both official and unofficial reasons. It is contended that this behavior will interfere with the flow of traffic leaving an area. In addition, it places population in high risk areas at greater disadvantage.

2.6.2.5 Spontaneous evacuation

Spontaneous evacuation is commonly defined as leaving before the warning to evacuate is given as an official order. The claimed impact is increased congestion on roadways. Another proposed problem of spontaneous evacuation is that it makes zonal or staged evacuations (e.g., evacuating a 2-mile radius, then a 5-mile radius and so forth) infeasible.

2.6.2.6 Aberrant behavior

Aberrant behavior includes looting, antisocial aggressive acts, or other criminal acts. Some believe that this type of behavior would increase during emergencies and would be more prevalent in the event of a nuclear power plant accident or nuclear crisis situation.

2.6.2.7 Failure to use specially designated routes

Traffic time estimates and planning assume that people will use certain optimum traffic routes during an emergency. Critics contend that people will not use those routes; therefore, the evacuation will not be effective. Furthermore, congestion will occur on the routes that people try to use, or routes will be used that place evacuees at higher risk.

2.6.2.8 Stress due to evacuation

This issue, mainly raised in the context of nuclear power and war, is that the act of evacuating leads to stress and that this stress is dysfunctional. Furthermore, some critics suggest that stress will not be mitigated because health services will not be provided during or after the evacuation experience.

2.6.2.9 Failure to obey officials

Again this is a point of contention for nuclear power and nuclear crisis emergencies. The issue is that people will disregard traffic control guides or warning instructions while evacuating. Critics also argue that people will disregard traffic signals or roadblocks.

2.6.2.10 Failure to evacuate for long periods of time

This issue is pertinent to long-term evacuations. It suggests that people will return or attempt to return while a threat still exists. This issue is related to reentry. For CRP it concerns the effectiveness of evacuation planning as a strategic defense policy.

2.6.2.11 Lack of knowledge on how to evacuate

The contention is that people will not get information on where to go and, lacking that information, will unknowlingly put themselves at higher risk, or will simply fail to evacuate because they do not know what to do.

2.6.2.12 Take shelter instead of evacuating

This issue is that many people, if ordered to evacuate, would either take shelter or refuse to relocate because they perceive that evacuation would not protect them. This issue has primarily been raised within the context of CRP.

2.6.2.13 Not going to designated host areas

Evacuation planning for CRP assumes people will go where they are told. This issue raises the point that people will not go to designated areas. The implication is that traffic time estimates and resource availability analyses would then be inaccurate.

2.6.2.14 Total social chaos

This issue involves total breakdown of civilization in the face of a potential nuclear attack. Some people believe that the images of war are so terrifying that mass panic, looting, and violence will ensue following a warning. It is contended that planning will increase this problem and not diminish the likelihood of chaos.

2.6.3 Emergency Worker Behavior

These issues contend that emergency personnel will engage in behaviors counter to evacuation goals. These predicted behaviors include

1. role abandonment,
2. denial of evacuees,
3. erosion of leadership, and
4. no outside help.

2.6.3.1 Role abandonment

Role abandonment involves emergency workers leaving their jobs to perform other roles. The main issue concerns the number of workers who will abandon the assigned jobs. A secondary issue is whether such behavior will render an evacuation ineffective.

2.6.3.2 Denial of evacuees

In nuclear crisis situations, it is contented that evacuees will not be allowed into host areas. This would be particularly true for evacuees from large urban areas. The outcome of the denial would be conflict and violence, including racial strife.

2.6.3.3 Erosion of leadership

This issue questions whether or not leadership could be provided to implement an evacuation during a nuclear crisis. Critics maintain that leadership would dissolve, resulting in a complete lack of social order.

2.6.3.4 No outside help to implement plans

Most evacuation planning assumes initial reliance on community resources with outside help over time if necessary. The issue here is whether or not this outside help would be available during a nuclear crisis evacuation.

2.6.4 Evacuation not Perceived as a Public Good

This set of issues challenges the safety goals of evacuation as a feasible protective action option. Included are

1. evacuation puts people at greater risk,
2. people have a right to stay, and
3. evacuations create liabilities.

2.6.4.1 Evacuation puts people at greater risk

The issue is that people are better off if they do not evacuate during certain threats. In hurricanes, it has been suggested that people take shelter in high-rise buildings on the coast because those caught in traffic or those who leave late would be trapped and inundated by storm surge. For nuclear power accidents, the issue is the possibility of increased radiation exposure while evacuating.

2.6.4.2 People have a right to stay

This issue has been raised for hurricanes and volcanoes. Some citizens maintain it is within their rights to expose themselves to risk; therefore, they should have the right to remain in evacuated areas.

2.6.4.3 Evacuations create liabilities

This is a complex issue with several dimensions. One is that by developing plans a governmental entity becomes liable for not evacuating people effectively. A second is that decision makers are liable for damages incurred while evacuating. A third is that liability exists for losses from false alarms. A fourth is that liability is incurred for the stress of a bad evacuation experience. The last is that liability arises for failure to develop evacuation plans.

3. EVACUATION PLANNING: CURRENT EXPERIENCE, PHILOSOPHY, AND PRACTICE

3.1 INTRODUCTION

In this chapter an overview of evacuation planning is provided for each major hazard. Current philosophies are discussed in the context of alternative protective action strategies. Recent experiences with evacuations are identified. Where federal programs have been developed, the basic outline of the program is presented. Where no national program exists, examples of localized programs are given. In the category of natural hazards, hurricanes, floods, tsunamis, and volcanoes are examined; no evacuation planning per se is done for earthquakes or tornadoes. In the category of human-induced hazards, dam failures, nuclear power plant accidents, hazardous materials accidents, and nuclear crisis situations planning efforts are reviewed.

3.2 EVACUATION PLANNING FOR NATURAL HAZARDS

3.2.1 Hurricanes

The United States has had considerable experience with hurricane evacuations in the past ten years. In 1985 alone four storms led to evacuations including Hurricanes Danny, Elena, Gloria, and Kate (USFEMA, 1986a). Elena resulted in the evacuation of an estimated 1.7 million people along the Gulf Coast. Many of the Elena evacuees in Florida evacuated again for Kate. Hurricane Gloria swept up the Atlantic Coast and led to the evacuation of millions. In 1983, Galveston, Texas, was partially evacuated when Hurricane Alicia threatened and eventually hit the coast (Savage et al., 1984). Several years later, Hurricane Diana created confusion in the Carolinas when it stalled off the coast after the Wilmington/Cape Fear, North Carolina region had been evacuated. Hurricane Iwa (1982), a minor storm, was the first hurricane to strike the Hawaiian Islands in many years (Chiu et al., 1983).

Evacuation is the chief protective action used to safeguard the population against hurricanes. As a result, FEMA has developed a comprehensive hurricane evacuation planning process (USFEMA, 1984b; 1983). The nation's coastline has been divided into 22 basins for implementation of the planning process. It is at the basin level that technical studies are done to provide data for preparing state and local plans (U.S Army Corps of Engineers, 1984). The quantitative studies cover five areas:

1. a hurricane hazard analysis,
2. a property and population vulnerability analysis,
3. a behavioral analysis,

4. a shelter availability analysis, and
5. a transportation analysis.

The hurricane hazard analysis involves simulation of hurricanes using computer models. In a study, 300 to 400 hypothetical storms are generated by varying hurricane intensity, size, direction, and speed. The National Weather Service developed two models, SPLASH and SLOSH, for use in these studies. SPLASH is used for open coastlines. SLOSH is used for bays or estuaries and has the ability to handle unique topographic features and ocean bottom characteristics. Both models have been fine-tuned using historical hurricane run-up data and have an error term of about 20%.

Information provided by the SLOSH models include estimates of the height of water from storm surges, time histories of surges at specified points, wind speeds at specified points, and wind directions at specified points. SPLASH only computes surge heights and durations of an approaching storm.

After all the computer simulation runs are made, the outputs are compared and storms with similar impacts are grouped together. Eventually about twelve scenarios are developed which represent all the storms used in the analysis. When a hurricane threatens, the emergency manager can use estimates of hurricane intensity, speed, and tracks to classify the storm into one of the scenarios and then use the predicted surge and wind speeds to identify areas at risk. Figure 3-1 provides a sample of this hazard information. Based on the historical model validations, the data used for planning is 20% greater than the maximum storm surge depth estimated by the model. The resultant "maximum envelopes of water" (MEOWs) for each scenario define evacuation areas under each scenario.

The vulnerability analysis defines and estimates the population at risk within MEOWs. This includes permanent populations, seasonal and daily transient populations, and institutionalized populations such as schools, hospitals, nursing homes, jails, and other concentrations of people.

The behavioral analysis is done to provide data on human response to hurricane warnings. The analysis provides information on hypothetical response to different hurricane scenarios. Information is generated on when people think they would leave, how many would leave, the number of vehicles they would use, the need for public transportation, and likely destinations.

The shelter analysis identifies structures outside of MEOWs that can be used to shelter evacuees who have no place to go. Using the behavioral data the demand for shelter is estimated. Based on the estimated demand, the appropriate number and location of shelters is estimated. In addition, the availability of emergency supplies are determined and inventoried.

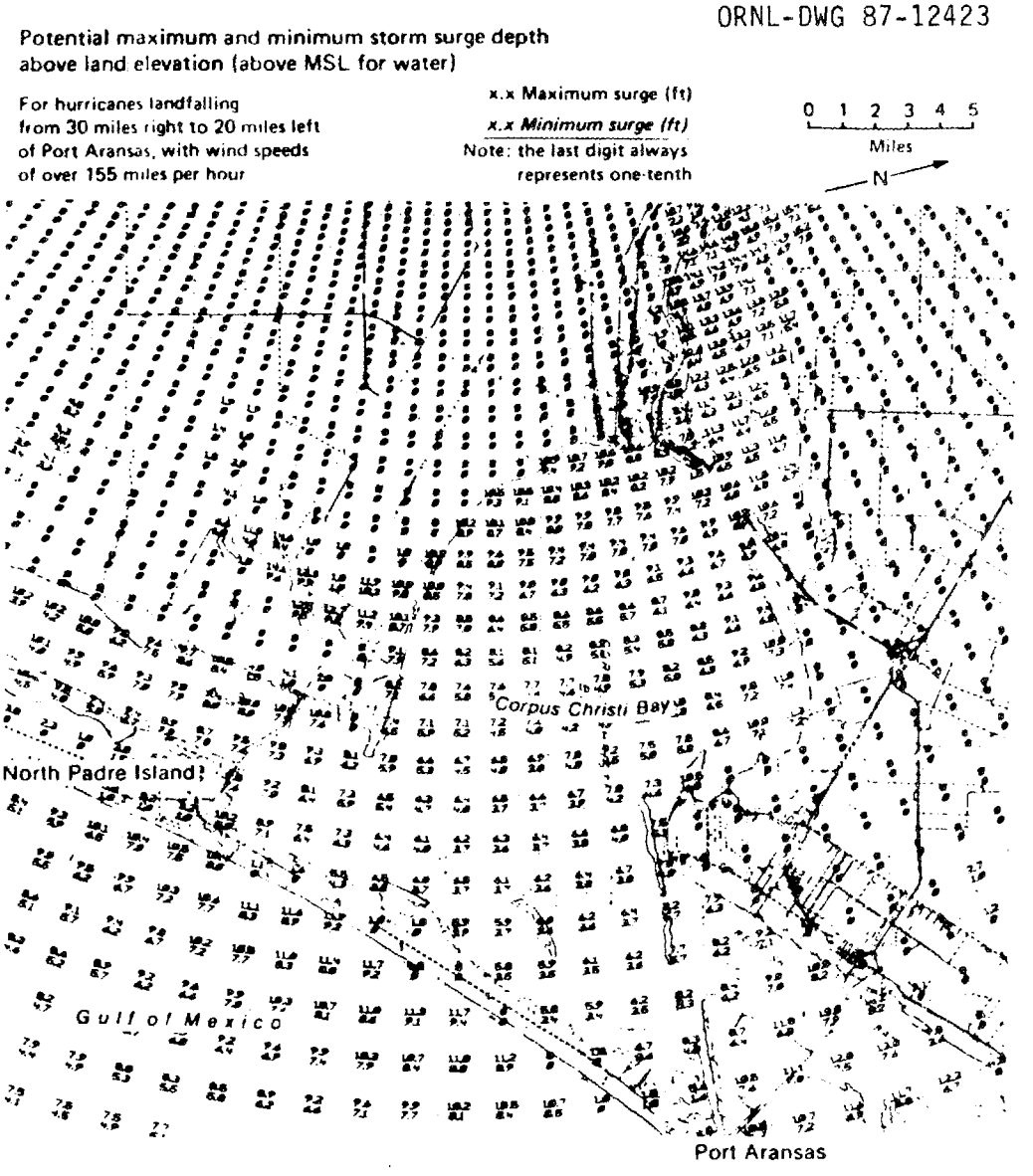

Fig. 3-1. Hurricane evacuation zone. Source: Berke and Ruch, 1985

The transportation analysis estimates the time required to evacuate various population zones. The analysis identifies evacuation routes and traffic capacities of those routes. Using data from behavioral studies, assumptions on route demand are made. Calculations are then made on how long it will take for people to evacuate into safe areas. This provides the decision maker with an estimate of when an evacuation decision should be made based on assumptions about the storm's characteristics.

Using the above technical information, evacuation implementation plans are developed at state and local levels. In support of the overall planning effort, a public information program and a property protection and hurricane hazard mitigation plan are developed as well.

3.2.2 Floods

Evacuations occur from flash and riverine floods on an annual basis in this country. No systematic records of flood evacuations are maintained to estimate how many events occur or how many people leave. In 1985, FEMA identified about 25 flood events that prompted localized evacuation (FEMA, 1986a). The largest involved 3000 people evacuating due to heavy flooding in Illinois. The Mississippi River has been the cause of many major evacuations. In 1983, an estimated 25,000 people evacuated in Louisiana prior to a major flood that left the residences of 100,000 people under water.

Evacuation is also a major protective action for flood events. Unlike for hurricanes, no national program for flood hazard evacuation planning has been established because floods are viewed as fairly localized problems. The basic approach that has been developed for use on a state and local basis is similar to that for hurricanes but is less sophisticated. The ideal approach follows five steps (Flood Loss Reduction Associates, 1984a; 1984b; 1984c):

1. analyzes the source of flooding,
2. analyzes the causes of flooding,
3. analyzes flood characteristics,
4. analyzes areas subject to inundation, and
5. analyzes areas at risk.

Sources of flood waters can include snowmelt, rainfall, dam failure, or a combination. Floods can occur from overbanking of a stream, drainage down a dry basin, or from overland flow. Floods can be caused by insufficient drainage capacity, blockage of channels by ice, encroachment of flood plains by construction, and urbanization. Floods vary as to velocity, depth, speed of onset, rate of water rise, duration, and seasonality.

The National Flood Insurance Program (NFIP) has developed inundation maps for communities on a national basis showing the locations of floodplains and floodways. Some additional investigation of risk factors, such as population at risk, building characteristics,

and flow velocities, to supplement floodplain maps may be needed by local communities to develop evacuation plans.

Once such data are established, a flood recognition system is developed to provide a lead-time for warning and evacuating populations at risk. These systems typically involve a combination of rain gauges in upstream basins to measure rainfall and automated stream height gauges to measure stream flow. By calculating run-off from precipitation data, flood stages are estimated with sufficient time for evacuating people at risk.

While this represents current philosophy many, if not most, flood evacuations are carried out on an emergency ad hoc basis, as a perceived need is recognized. The NFIP has provided most communities with inundation maps which can be used to guide evacuation activities. Most floods are of a slow enough onset to provide ample time to recognize a hazard and move people. Evacuation planning for flash floods is still problematic because of the short warning time.

3.2.3 Tsunami

Tsunamis are rare events in comparisons to floods and hurricanes. Evacuation warnings have been issued for only a few events in the past 10 years in the United States. In 1986 seismic activity in Alaska prompted an evacuation warning for Hawaii, but the event never materialized. The last major tsunami to strike the western continental coast was in 1964 following the Alaskan earthquake. In Hawaii, the most recent tsunami that resulted in fatalities occurred in 1978 on the south coast of the island of Hawaii.

Evacuation planning is needed for two types of tsunamis. Distant tsunamis originate from seismic activity across the ocean. Local tsunamis originate from seismic activity just offshore of the affected area. The Pacific Tsunami Warning System detects distant tsunamis through tide-monitoring stations. This provides between four and fifteen hours of lead-time which is generally sufficient to evacuate high risk areas. Risk areas are delineated as part of the NFIP and provide estimates of maximum run-up heights. These delineations are subject to some uncertainties because of the lack of a good historical record. In some high population areas such as Hawaii, maps and evacuation instructions are published in the telephone book. In some remote areas evacuation instructions are printed on signs and markers denote heights that are safe from the waves.

Local tsunamis present greater evacuation problems. The wave occurs within minutes of the seismic activity. An evacuation needs to occur rapidly. Currently the only means to warn of a local tsunami is through the use of sirens activated by a predetermined-magnitude earthquake. The disadvantages of such systems is that they will be accurate only 10% of the time because few offshore earthquakes result in a local tsunami.

3.2.4 Volcano

Evacuations due to volcanic activity are implemented regularly on the island of Hawaii. The last experience on the Kalapana coast area came in November, 1986, due to an eruption of Kilauea volcano. Eruptions could eventually lead to a need to evacuate Hilo, the largest town on the island. In the past 10 years, two evacuations due to increased volcanic risks took place in the continental United States. The first was at Mt. Baker, and the second at Mt. St. Helens. Both are in the state of Washington. The eruption at Mt. Baker never occurred, but the evacuation at Mt. St. Helens likely saved many lives. A third possible evacuation situation may be developing in the Mono-Inyo crater chain near the resort area of Mammoth Lake, California. Evacuation plans and routes have been developed because of increased volcanic activity, but they have not been needed to date.

Evacuation planning is therefore needed for volcanic activities in Hawaii and in the Cascades in the Pacific northwest states. Currently, no systematic approach to evacuation planning has been implemented on a national basis due to the rarity of eruptions. In Hawaii, eruptions are frequent and of a slow protracted nature. Emergency planners evacuate sparsely populated areas in the projected course of lava flows. Evacuation plans are based on numerous eruptive sequences and frequent experience with evacuation. In the Cascades, eruptions are rare events, and evacuation planning is more difficult to implement except after a threat materializes.

The basis for site-specific evacuation planning comes from the USGS geological hazard assessment program. Detailed studies are conducted to determine the kind, frequency, scale, and extent of past eruptions, and what could be predicted from these data regarding future eruptions. Hazard information has been produced regarding various volcanic risks including estimates of areas subject to lava flows, pyroclastic flows, mudflows, lateral blasts, and ashfalls (Fig. 3-2). As yet, there is no systematic program that can use these data to establish an evacuation strategy for volcanoes in the Cascades. An outline of a comprehensive planning framework is provided in Fig. 3-3 that could be used for volcanic hazards.

3.3 HUMAN INDUCED HAZARDS

3.3.1 Dam Failure

Notable dam failures have occurred in the United States where the failure to evacuate has resulted in high loss of life. A dam failure during the 1972 Black Hills, South Dakota, flood contributed to the 230 fatalities. The disaster at Buffalo Creek, West Virginia, due to the failure of a slag heap dam in 1972 was also devastating, taking 125 lives. Dam failures during flooding at Johnstown, Pennsylvania, and the Kelly Barnes Dam above Tacooa, Georgia, have also caused fatalities. It is estimated that 9,000 dams in the United States pose a significant

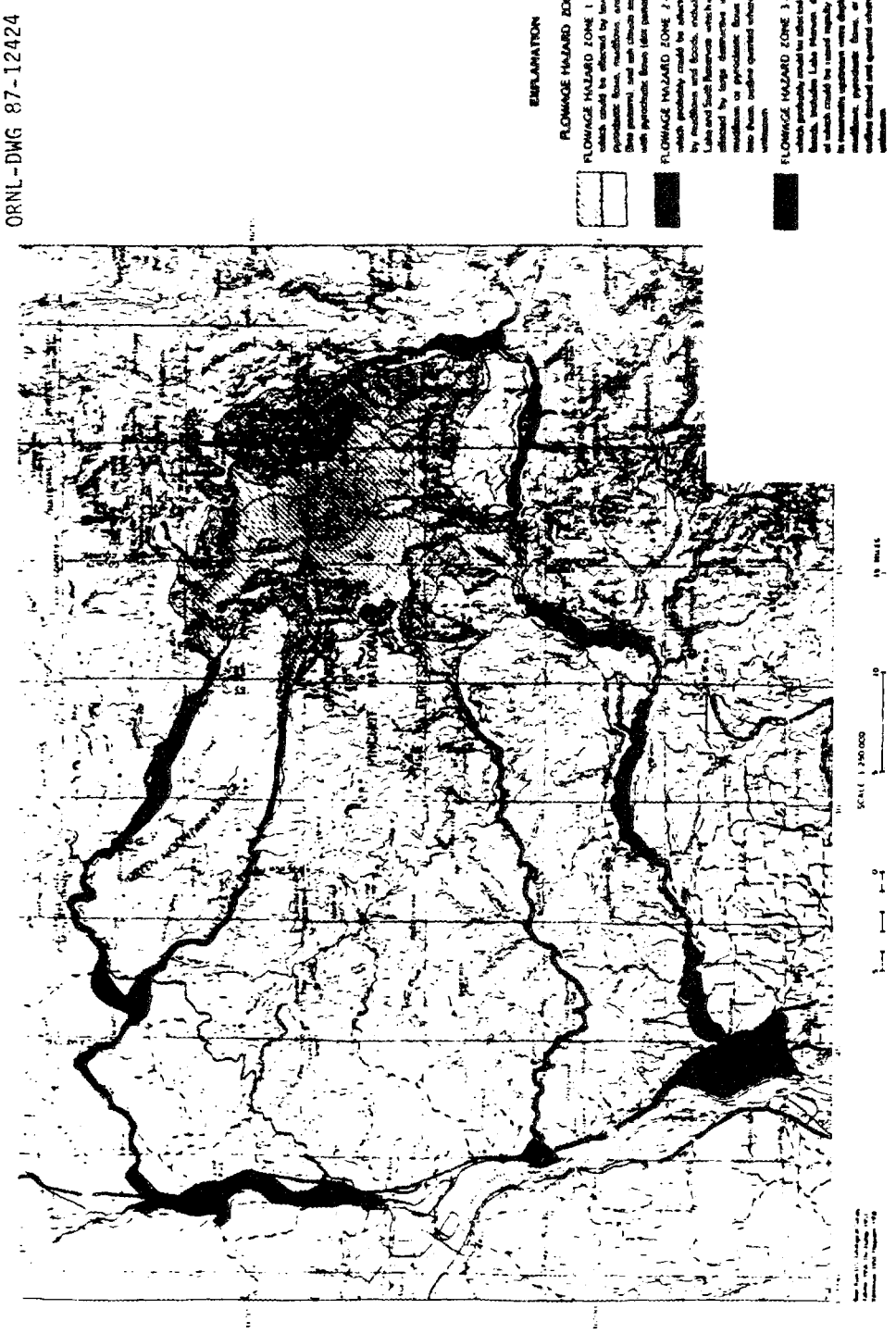

Fig. 3-2. Mount St. Helens risk zones. Source: U.S. Geological Survey.

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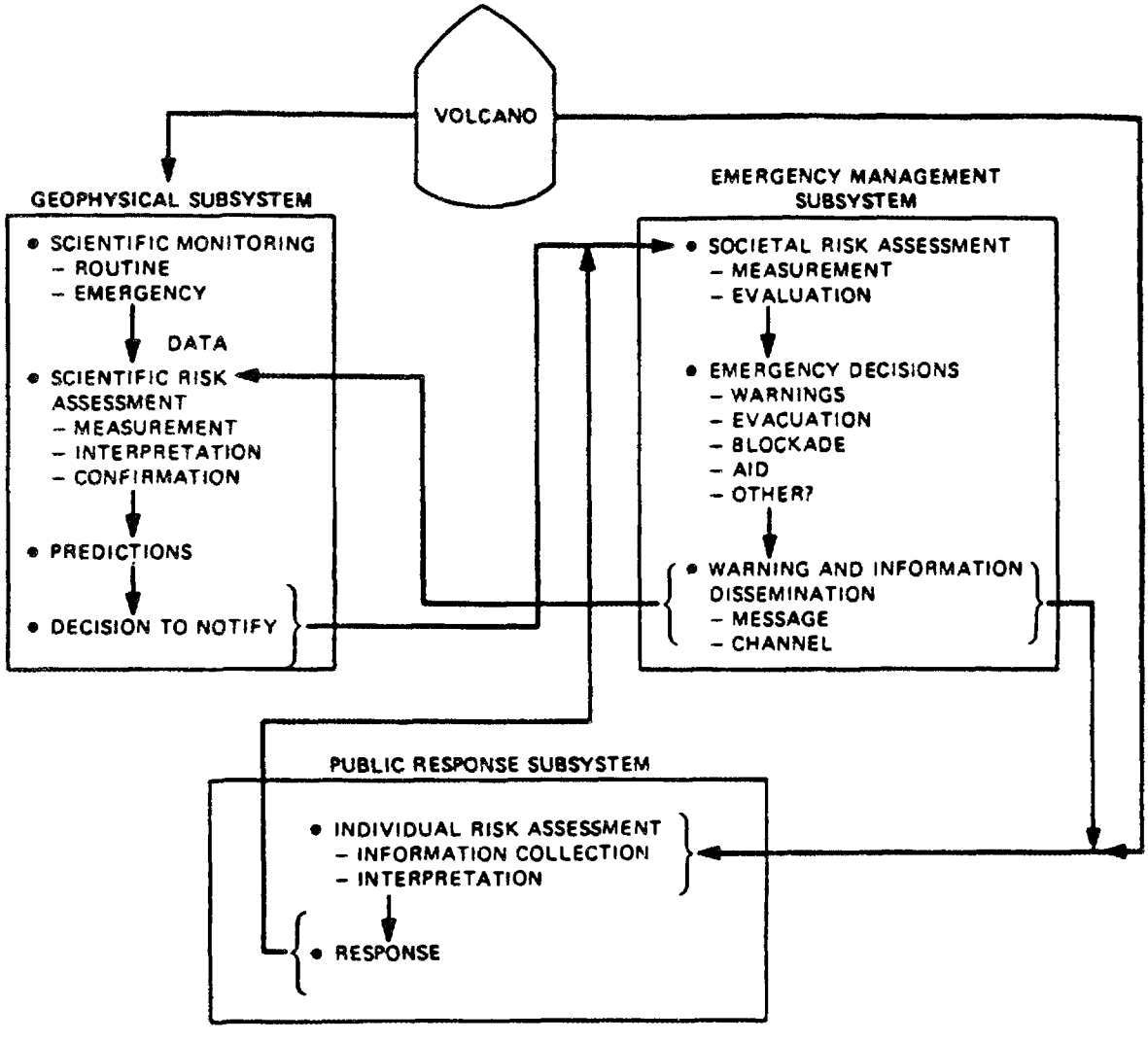

Fig. 3-3. Volcano evacuation planning framework.

risk to downstream inhabitants. From 1980 to 1985 there were about 82 dam failures in the United States, but most did not necessitate an evacuation (USFEMA, 1986b)

Evacuation planning for dams and reservoirs operated or regulated by the federal government is administered or carried out by a variety of federal agencies. The major ones include the Department of Agriculture, the Department of Army Corps of Engineers, the Department of Energy, and the Department of Interior. Federal policy for preparation of evacuation plans for dams are defined in the Federal Guidelines for Dam Safety (Interagency Committee on Dam Safety, 1979). Emergency Action Plans (EAPS) are being prepared for high- and significant-hazard dams in accordance with that guidance. The responsibility of the agencies are limited to the following actions:

1. evaluate possible modes of dam failure,
2. prepare inundation maps,
3. classify inundation areas for hazard potential,
4. assess time available for response,
5. develop planning scenarios,
6. develop a general emergency plan, and
7. develop notification plans including public warnings.

The development of an evacuation plan is delegated to the local jurisdictions at risk. These plans, according to the guidelines, may include delineation of areas to evacuate, routes, traffic control, shelters, emergency transportation provisions, needs for evacuating special or institutional populations, procedures for security and perimeter control, reentry procedures, and organizational responsibilities. Planning procedures have been developed by several agencies (USFEMA, 1986b).

Emergency planning for private dams and reservoirs is basically regulated by the states. As of 1985, 28 states had provisions for requiring evacuation plans (Tschantz, 1985). The Corps of Engineers inspects private dams that pose potential risks to the public. When an unsafe dam is identified, the Corps recommends development of an EAP. FEMA (USFEMA, 1985) has developed a general planning guide to provide assistance in developing evacuation plans.

3.3.2 Nuclear Power

Only one evacuation of the general public has occurred at a nuclear power plant in the United States. This, of course, was at the Three Mile Island power plant near Harrisburg, Pennsylvania, in 1979. This experience, involving the evacuation of about 150,000 people, is discussed in depth in the next chapter. The accident radically changed evacuation planning at nuclear power plants (USNRC, 1979b; 1981a; 1981b; USFEMA, 1980; 1982).

Two major options for population protection exist in a nuclear power plant accident: sheltering and evacuation (Gant and Schweitzer, 1984; USNRC, 1979a). Protective action planning is undertaken in a plume exposure pathway emergency planning zone (EPZ) in a radius of about ten miles (Fig. 3-4). This distance has been determined to be the likely maximum distance for harmful exposure to radionuclides although under some circumstances evacuation could be required for greater distances (USNRC & USEPA, 1978).

Protective action decisions are the responsibility of off-site government authorities; however, utilities that operate nuclear plants are required to provide recommendations. Evacuation planning requirements are specified in NUREG-0654; FEMA REP-1 (USNRC and USFEMA, 1980).

Prior to operating, a nuclear power plant must have an emergency plan approved by FEMA and the Nuclear Regulatory Commission (NRC). With respect to evacuation, the plan must include the following. First, the plan must establish a predetermined scheme for classifying an accident into one of four categories and establish initial protective actions based on the classification level. Second, means for prompt notification of the public officials and alert of the population in the EPZ must be established. Third, a means of identifying the accident source terms and projecting the atmospheric dispersion of radioactive particles must be established. These projections are used for recommending an evacuation. Fourth, evacuation routes must be identified. Fifth, evacuation time estimates must be prepared. Sixth, an evacuation implementation plan must be prepared.

The evacuation plan contains the following elements:

1. maps showing evacuation routes and areas and shelters,
2. maps of the population distribution in the EPZ,
3. the means of notifying the public,
4. the means for protecting non-mobile people,
5. projected traffic capacities of evacuation routes,
6. control of access to evacuated areas,
7. identification of and means for dealing with potential traffic impediments,
8. evacuation time estimates,
9. means of registering evacuees, and
10. mechanisms for making an evacuation decision.

The key features of this approach are that it is comprehensive, rigorous, and based on scientific studies of source terms and dispersion potentials. Several descriptions of the approach (Jaske, 1983; Olds, 1981) as well as critiques (Cutter, 1984; Hull, 1981a; 1981b; USGAO, 1984) have been written.

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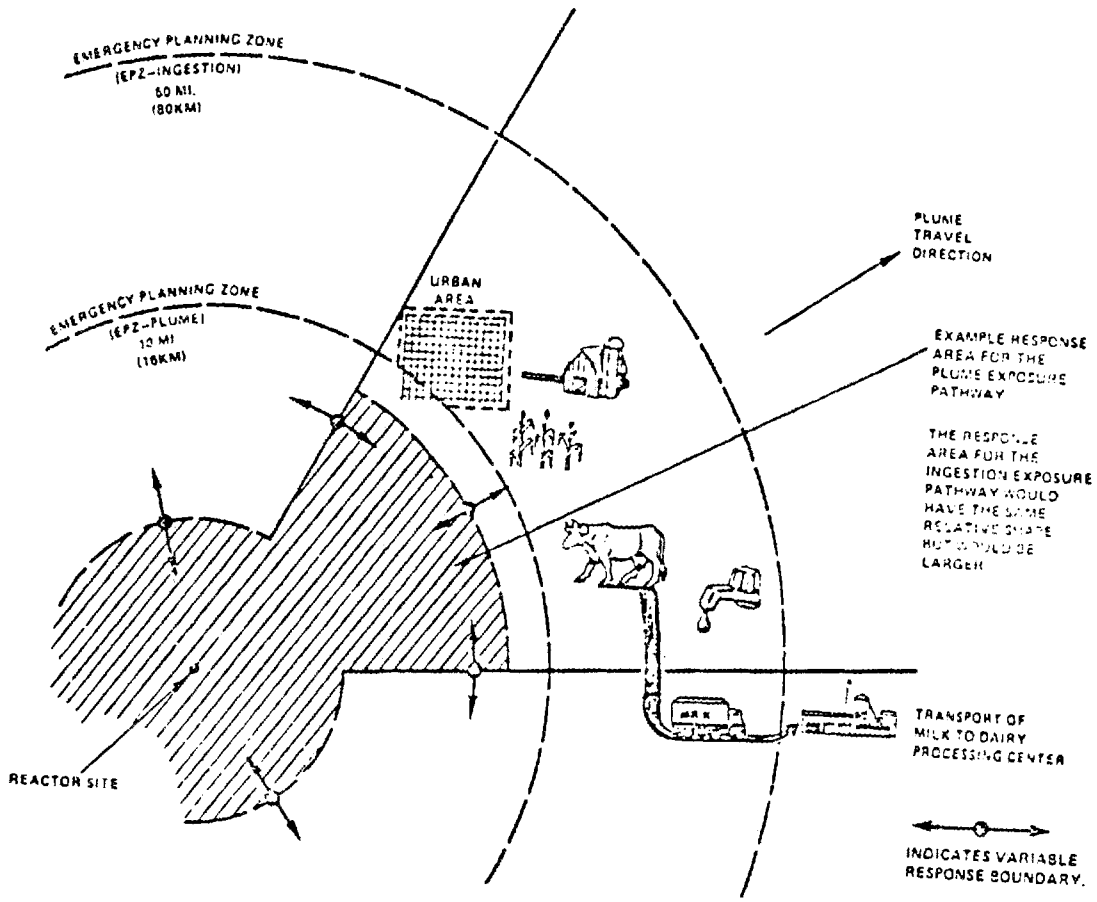

Fig. 3-4. Nuclear power plant emergency planning zone.
Source: U.S. Nuclear Regulatory Commission.

3.3.3 Hazardous Materials

There have been nearly 300 evacuations due to chemical releases in the United States during the five-year period from 1980 to 1984 (Sorensen, 1986b). Table 3-1 lists these evacuations by cause and year. These evacuations have involved the movement of about 1000 people per event on the average. The largest was estimated to include 30,000 people. In 1985, it was estimated that about 125 evacuations took place because of the release of some form of hazardous materials (USFEMA, 1986a).

Evacuation planning is done for two types of hazardous material incidents. The first is for fixed site releases of materials from production or storage facilities. The second type involves spills or accidents during transportation.

Currently evacuation planning for transportation accidents is done at a local level. The Department of Transportation (DOT) and FEMA have published guidance on developing generalized hazardous material contingency plans for transportation. FEMA publications do not provide guidance regarding evacuation planning for this hazard. DOT (USDOT, 1984) has provided some guidance on recommended evacuation distances for transportation accidents (Fig. 3-5). These do not differentiate for size of the spill (except between a spill and large spill). Other information on calculating evacuation distances is also available (Thomsen, 1984; Kelty, 1984; Sheldon, 1983).

Recent legislation, the Superfund Reauthorization Act (1986), gives some indication of the direction that federal policy is taking for fixed site hazardous materials emergency planning (USEPA, 1986). Local communities where there are facilities that store given amounts of hazardous chemicals would be required to develop an evacuation plan. It is unclear, however, how this regulation will be implemented. In anticipation of this regulation, preliminary guidance has been developed by the EPA (USEPA, 1985). This document identifies the 400-plus chemicals covered by the program but does not provide details on plan development. At the time of writing, FEMA had initiated a program that would develop more comprehensive planning guidance for hazardous materials accidents. This program is patterned after the approach used for nuclear power plant emergencies. Source terms for various accidents are being calculated and will provide the technical basis for evacuation planning. Several other planning guides are available for use in developing evacuation plans (Depol and Chercmisinoff, 1984; Terrien, 1984; Tierney, 1980).

3.3.4 Nuclear Crisis

Since the early 1960s, the government developed the idea to relocate urban populations in the face of a nuclear war (Kerr, 1983; Zuckerman, 1984). In 1984, FEMA abandoned national plans to evacuate high risk areas as a means to protect populations in an international

Table 3.1. Chemical accident evacuations by cause and year

Cause of evacuation	1980	1981	1982	1983	1984	Totals
Train derailment	14	8	13	12	8	55
Train car spill/fire	3	6	5	4	5	23
Truck accident	9	9	6	6	5	35
Truck spill/fire	1	11	4	9	7	32
Chemical plant release	5	10	15	8	5	43
Industrial plant release	3	10	18	23	24	78
Pipeline	2	1	1	0	0	4
Ship incident	2	1	0	0	0	4
Waste site accident	0	1	2	3	1	7
Other	4	5	4	0	1	14
Totals	43	62	68	65	57	295

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TABLE OF ISOLATION & EVACUATION DISTANCES

NAME OF MATERIAL SPILLING OR LEAKING (ID No.)	INITIAL ISOLATION: SPILL or LEAK FROM (drum, smaller container, or small leak from tank) ISOLATE in all Directions feet	INITIAL EVACUATION: LARGE SPILL FROM A TANK (or from many containers, drums, etc.) FIRST ISOLATE in all Directions feet	THEN EVACUATE IN A DOWNWIND DIRECTION Width miles	Length miles
Acrolein (1092)	300	870	1.5	3.4
Acrylonitrile (1093)	80	180	0.4	0.8
Ammonia, anhydrous liquified (1005) Ammonia solution, with more than 44% (2073) Anhydrous ammonia (1005)	80	180	0.4	0.8
Boron trifluoride (1008)	330	870	1.7	3.8
Bromine (1744)	170	350	0.8	1.3
Carbon bisulfide (1131) Carbon disulfide (1131)	50	100	0.2	0.3
Chloride of phosphorus (1809)	110	230	0.5	0.8
Chlorine (1017)	140	390	0.7	1.8
Dimethylamine, anhydrous (1032)	80	170	0.4	0.8
Dimethyl sulfate (1595)	80	170	1.6	2.2
Epichlorohydrin (2023)	40	80	0.2	0.2
Ethylene imine (1185)	270	570	1.4	2.1
Ethylene oxide (1040)	80	180	0.4	0.5
Fluorine, cryogenic liquid (9192)	460	900	1.5	3.0
Hydrochloric acid, anhydrous (1050) Hydrogen chloride, anhydrous (1050) Hydrogen chloride, liquid (refrigerated) (2186)	190	450	1.0	1.4
Hydrocyanic acid (1051) Hydrogen cyanide, anhydrous (1051)	90	180	0.5	0.7
Hydrofluoric acid, anhydrous (1052) Hydrogen fluoride, anhydrous (1052)	150	300	0.7	1.1

TABLE OF ISOLATION & EVACUATION DISTANCES

NAME OF MATERIAL SPILLING OR LEAKING (ID No.)	INITIAL ISOLATION: SPILL or LEAK FROM (drum, smaller container, or small leak from tank) ISOLATE in all Directions feet	INITIAL EVACUATION: LARGE SPILL FROM A TANK (or from many containers, drums, etc.) FIRST ISOLATE in all Directions feet	THEN EVACUATE IN A DOWNWIND DIRECTION Width miles	Length miles
Hydrogen sulfide (1053)	120	240	0.4	0.9
Methylamine, anhydrous (1061) Monomethylamine, anhydrous (1061)	110	320	0.5	0.8
Methyl bromide (1062)	50	90	0.2	0.3
Methyl chloride (1063)	30	90	0.1	0.2
Methyl mercaptan (1064)	270	770	1.9	3.0
Methyl sulfate (1595)	80	170	1.6	2.2
Nitric acid, fuming (2032) Nitric acid, red fuming (2032)	100	210	0.5	0.7
Nitric oxide (1660) Nitric oxide and Nitrogen tetroxide mixture (1975)	80	180	0.4	1.0
Nitrogen dioxide (1067) Nitrogen peroxide (1067) Nitrogen tetroxide (1067)	110	220	0.5	0.8
Oleum (1831)	200	500	1.5	2.2
Perchloromethyl-mercaptan (1670)	290	450	1.1	1.6
Phosgene (1076)	800	1350	3.3	5.2
Phosphorus trichloride (1809)	110	230	0.5	0.8
Sulfur dioxide (1079)	100	250	0.6	0.8
Sulfuric acid, fuming (1831) Sulfuric anhydride (1829) Sulfur trioxide (1829)	200	500	1.5	2.1
Titanium tetrachloride (1838)	30	60	0.2	0.1
Trimethylamine, anhydrous (1083)	50	90	0.2	0.3

THIS INFORMATION IS FOR USE IN ADDITION TO THE GUIDE PAGE RECOMMENDATIONS FOR HANDLING THE TOXIC HAZARDS OF THESE MATERIALS IF THEY ARE NOT ON FIRE

Fig. 3-5. Evacuation distances for hazardous material accidents.
Source: Department of Transportation

crisis period. Crisis relocation plans are optional at state and local levels as part of the integrated planning concept (USFEMA, 1984a). In 1984, approximately 50% of the communities in the United States had done some formal planning for nuclear crisis. The current status of planning is not clear. Some communities have refused to develop plans or incorporate nuclear crises into generic plans (Schroeder, 1984).

Under the current planning process, evacuation is divided into three areas of management: command/control, analysis, and law enforcement. Command and control includes the overall coordination of the evacuation, interaction with outside jurisdictions, and logistics control. An analysis team is formed to assess the situation, to collect data on the threat, and to prepare recommendations for evacuation. Law enforcement activities include security, warning, traffic control, and evacuation assistance.

Crisis relocation planning, done at the local level, would require risk areas to develop plans based on state-level guidance regarding potential host areas. The state would also be responsible for developing a plan to support crisis relocation centers in host areas if those areas did not develop an adequate plan.

Figure 3-6 depicts the basic planning process developed by the Defense Civil Preparedness Agency (USDCPA, 1979a). The plans address the following topics: transportation of people, housing and sheltering, protection from attack, medical support, public safety, resource needs, movement of supplies, organizational relocation, and governance. A large number of planning guides have been developed to provide technical assistance to state and local governments for plan development. These cover operations planning (USFEMA, 1981; USDCPA, 1979b), public information (USDCPA, 1977), transportation (USFEMA, 1984d; Billheimer and Fratesa, 1979), and prototype plans (USDCPA, 1976; Dresch, et al., 1976).

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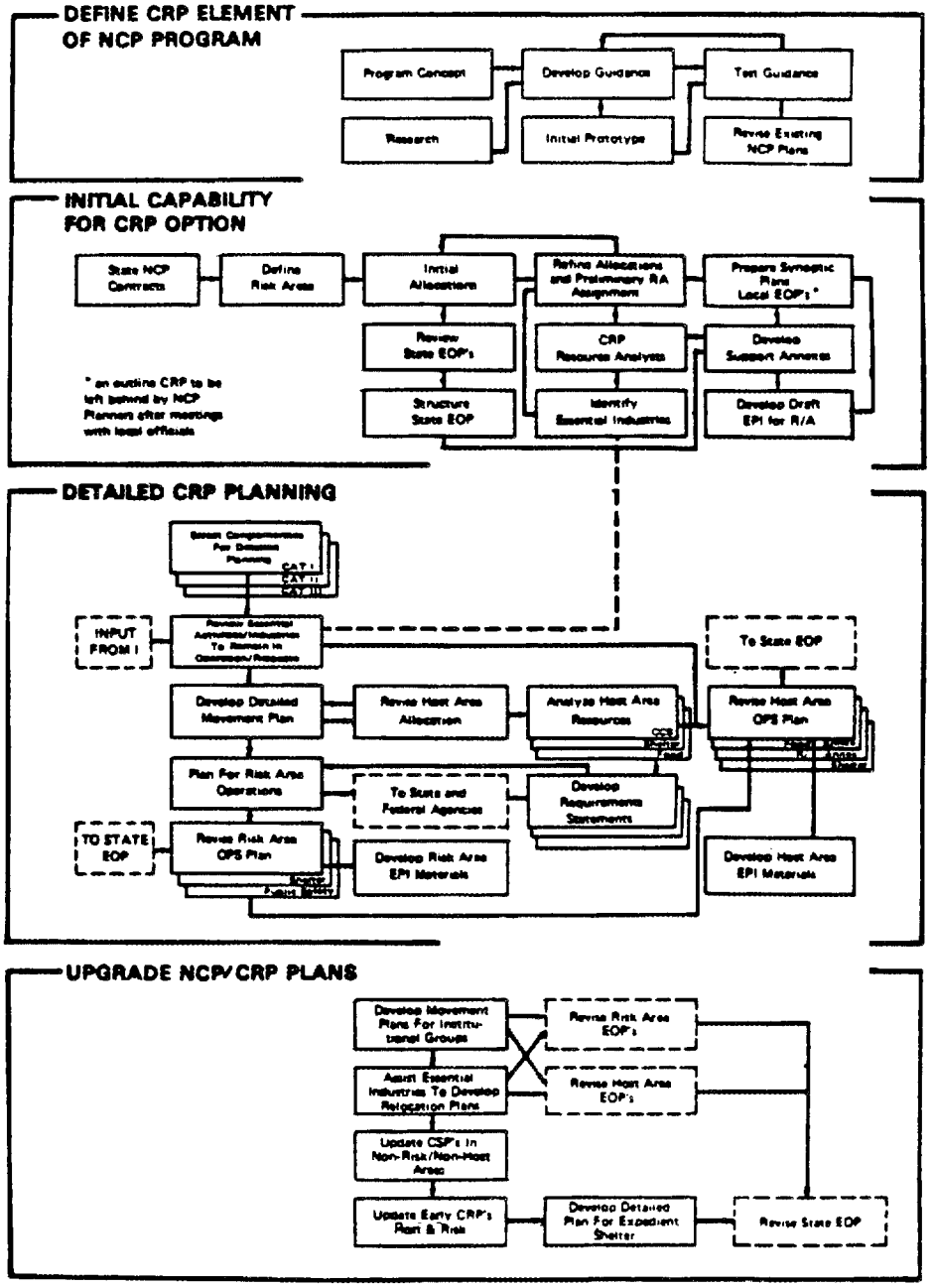

Fig. 3-6. Crisis relocation planning framework.
Source: Federal Emergency Management Agency

4. BEHAVIORAL FINDINGS

In this chapter, we review the findings of behavioral research for each hazard as they relate to evacuation issues. As Perry, Lindell, and Greene (1981) have noted, there are multiple forms of evacuation-preventive, protective, rescue, and reconstructive. Although timing and period of evacuation have been noted as methods of categorizing types of evacuation issues, we found that conceptually the boundaries were ill-defined and presented problems in separation of withdrawal patterns. The time actual evacuation begins is questionable. Should those persons who leave an area prior to any advisement by officials be considered evacuees? How do we know they did not leave for other reasons than those associated with the threat? The question arises about persons having once evacuated prior to the event who are then forced to evacuate an area a second time because of unsanitary conditions. Does this mean they evacuated the area more than once or that reentry was only temporary? Thus, the timing of evacuation appears as a continuum with various points of withdrawal instead of discrete periods such as pre-event, event or post-event definitions.

Other aspects of the literature presented a more coherent method of organization. The first aspect concerned the system level. In almost all the literature reviewed, discussions centered on either the individual or the organizational response. The second was related to information regarding source, content, and use in decision making for individuals and officials alike. How and where people received their information regarding the threat or hazard, what influenced their interpretations of the information received, what was the action taken or decision made, and finally, how did the information affect perceptions of the hazard either prior to the event, at the occurrence of the event, or experience following the event. Characteristics of the population to which a warning message is sent must also be evaluated in considering evacuation issues. Further questions raised then appeared as sub-categories with focus on topics such as saliency of information given the situational context, sensitization or familiarity with hazard, life cycle variables, demographic factors and, in addition, the policy implications for planning emergency measures.

4.1 BEHAVIORAL RESEARCH FINDINGS FOR NATURAL DISASTERS

Evacuation behavior in natural disasters has been extensively studied in a variety of ways for a number of years. Studies have primarily focused on hurricane- and flood-related evacuations. The latter includes flooding from dam failures. A much smaller research base exists for other types of natural hazards. Quarantelli (1980) summarizes much of the pre-1980 literature. This report does not seek to reproduce that effort, but instead reports findings for each hazard with an emphasis on recent studies. In the following sections, the discussion begins with an

examination of behavioral issues. This is followed by an examination of the role risk and risk perception play in decision making. Research findings regarding warning and evacuation experience are reported. Each section concludes with a discussion of the implications of behavioral findings for planning.

4.1.1 Earthquakes

4.1.1.1 Behavioral issues

Two areas of research have been investigated for earthquake hazards: (1) behavior during and following a quake, and (2) behavior elicited by earthquake predictions or forecasts. Although the United States has experienced only four major earthquakes since 1900 that caused substantial damage and loss of life, scientific evidence points to one or more catastrophic earthquakes before the end of the twentieth century (Mileti, Hutton and Sorensen, 1981). Methods of predicting a destructive quake, although studied worldwide, are not conclusive. Like other hazardous threats, the risks require careful assessment of both individuals and officials.

Some areas of the United States are assumed to be more prone to earthquakes. The Panel on the Public Policy Implications of Earthquake Prediction (1975) noted that although earthquake preparedness measures have been concentrated in the Western states, the possibility of quakes in the East and Midwest should also be considered, especially in new building constructions.

4.1.1.2 Risk and risk perception

Obtaining and using information generated by earthquake predictions to determine the risk involved is riddled with problems compounded by the ambiguity and general system dynamics of earthquake prediction. By far the most extensive studies of earthquakes have been conducted in California where intensive monitoring and pseudoscientific prophecies have captured both the public's and media's interest. Both short- and long-term studies have focused on the earthquake predictions effect on residential behavior regarding the earthquake risk.

In a longitudinal study on human response to earthquake prediction at the individual level, Turner et al. (1979) found that the majority of respondents received their information from media sources such as television news broadcasts (88.5%), followed by newspapers (76.7%), and radio (70.9%). Surprisingly about half (48.8%) received their information from movies, but only 3.3% from organizations to which they belonged. Awareness of the earthquake prediction threat was not converted into more extensive preparations. In support of this finding is Kielcolt and Nigg's Los Angeles, California, study which revealed that "mediating cognitive and behavioral variables do not appreciably increase the likelihood that people living in earthquake-endangered areas and structures

will consider a move due to earthquake threat" (1982:151). Kielcolt and Nigg reason that no relationship was found between being aware of the risk and actively behaving to lessen the threat was because no community definition of a "crisis" had developed nor had any of the near-predictions disrupted the everyday "normal" life of the community in a systemic manner. According to the Kielcolt and Nigg survey data, almost three-quarters (72.8%) of the respondents had discussed the possibility of an earthquake but less than half (43.4%) thought a damaging quake would occur within the next year.

Kielcolt and Nigg (1982) found that people did not translate the objective knowledge about an earthquake hazard into decisions to move (to evacuate from the area permanently). In addition, they found that persons most fearful tended to take no actions whereas those less fearful were more likely to consider moving. The greater the perceived risk (including greater knowledge of predictions, expectations for future quakes or being a member of an endangered group), the greater the probability of moving. Contrary to Von Arsdol's 1964 findings on hazard perceptions of Los Angeles residents, ecological location seems to have little effect on the perception of the hazard. "For Los Angeles residents, objectively being "at risk" is not a sufficient reason to consider moving from one's community" (Kielcolt and Nigg, 1982:151). Rather the common mobility variables, such as life-cycle, attachment to community, owner-occupancy and socioeconomic factors, were found most influential in the decision to move from the threatened vicinity.

In terms of interpretation of earthquake predictions, the Panel on Public Policy study (1975) indicated that in general people have difficulty interpreting what is meant by a prediction and, therefore, are confused regarding response to predictions. The report also noted that the distinction between a warning and a prediction is often misinterpreted by the public. This is not surprising because both the time-window and saliency of the threat are difficult to assess given the current state of the art. Others maintain that distinctions between warnings and predictions are meaningless (Committee on Socioeconomic Effects of Earthquake Prediction, 1978).

The Turner et al. (1979) longitudinal study in Southern California found that saliency regarding earthquake hazards decreased over time but that more discriminating attention, termed "increased realism," was accorded the threat. The study also noted that changes occurred in the number of actual announcements remembered during the study. This factor was not correlated with the actual number of announcements available during the study period. In assessing the awareness of the earthquake hazard, Nigg (1982) noted a lapse of active interest in the threat, but no similar decline in personal preparedness nor decline of support for additional government preparedness planning occurred over time.

4.1.1.3 Warning experience

"Crying wolf" by authorities is not viewed as a problem if or when an earthquake threat originates. People wanted to be kept informed and looked to the government to provide accurate appraisals of the earthquake danger (Turner, 1983). Turner et al. (1979) noted the tendency of people to interpret small quakes as clues to the imminence of a destructive quake. Overall, however, earthquakes remained of low saliency even though people wanted more information than they received (Turner, 1983).

Mileti et al. (1981) documented citizen response to a pseudo-scientific prediction in Wilmington, North Carolina. More people responded to the warning than believed in it. The most frequent response was to stockpile emergency supplies. Only a small fraction of the population (two families) evacuated. Ten percent reported that they would consider moving because of the warning. Persons of lower socioeconomic class were more likely to view the warning as credible but were less likely to respond to the warning.

4.1.1.4 Evacuation experience

The Arnold et al. study (1982) examined the evacuation behavior of persons in a six-story building in California following earthquake damage. In assessing the actions, the study found that the evacuation behavior showed the force and value of emergency drills--over three-fourths (or 79%) of the evacuees followed drill procedures for bomb threats. Although no order to evacuate was given, withdrawal from the building appeared an instinctive reaction once the trembling had stopped. Entire evacuation of the building took only four to five minutes to complete. People followed paths of "leaders" or those first to evacuate. No one panicked during exiting. Most people (83%) had previous earthquake experience, and 70% of respondents based their initial response on previous experience with earthquakes including remaining in the building and sheltering until action stopped. Furthermore, instinctive daily patterns outweighed correct evacuation exiting according to earthquake drills--evacuees used the exit most familiar to them. Thus, asking evacuees to evaluate alternate routes (i.e., between bomb threat and earthquake threat) appears unrealistic in an actual emergency.

4.1.1.5 Planning issues

Mileti, Hutton, and Sorensen (1981) studied responses to earthquake prediction and found that both families' and organizations' image of damage was positively and directly related to responses to earthquake predictions. Access to information and ties to place of residence increased actions to reduce vulnerability. Overall they found that the more resources available, the greater the choices to reduce vulnerability and increase preparedness (i.e., the benefits of earthquake prediction accrue to the affluent, not the poor).

The Panel on Public Policy Implications of Earthquake Prediction (1975) observed that public mitigation measures must deal with legal and economic consequences as well as the problems of equity and political intrusions. Conflicts may result from confrontations between media and officials. The Panel (1975) suggested evacuation of specific populations-at-risk rather than general evacuations. The Panel study also cited the need for the federal government to establish guidelines for earthquake mitigation policies. Such guidelines would ensure that coordination and continuity of planning measures would not be influenced by local agendas or politics.

4.1.2 Floods

4.1.2.1 Behavioral issues

Unlike earthquakes, floods are frequently predictable and generally follow environmental cues alerting people to danger. When there is no excessive rainfall to provide cues or residents lack experience with floods, then the warning response is often met with disbelief and inaction. Generally, confirmation of the event can be obtained through official or media sources. These generalizations do not apply to flash floods or to unexpected or infrequent flooding, such as occurs in usually dry arroyos in the southwest desert regions, or to dam-failure-induced flooding.

French et al. (1983) analyzed mortality rates from 34 flash floods over a 12-year period and found that the highest number of deaths per flash flood occurred when dams failed. Of the deaths associated with flash floods, 93% were due to drowning, 42% of those deaths were car-related. Thus, using a normal behavioral means of escape--via car--can have disastrous results in flood situations (Gruntfest, 1977; Moore et al., 1982; Sorensen, 1986a). Some anecdotal evidence also suggests convergence behavior may contribute to deaths from flooding. Officials have frequently found crowd control a problem during major flooding. However, empirical evidence on the behaviors leading to flood fatalities is scarce.

4.1.2.2 Risk and risk perception

The social context in which warnings are issued plays a critical role in people's response to warnings to evacuate flood-prone areas. Perry, Lindell, and Greene (1981) conclude three major social-network variables affected warning response--kin interactions, community involvement, and age. The social-psychological variables that shaped the evacuation decision were (1) warning belief, (2) level of perceived risk, (3) possession of adaptive plan, and (4) family context in which the warning was received. Gruntfest (1977) found that those persons in groups of five or more were more likely to do something (i.e., take protective action) than were persons acting alone. Such collective decisions are credited with the increased survival rates for group

members during the flash flood that hit the Colorado Big Thompson Canyon in 1976.

4.1.2.3 Warning experience

In short-term events, situational context--whether families were together at the time of warning--and perceived warning certainty were found to have no predictive value for warning confirmation (Mileti and Beck, 1975). Mileti and Beck also found that evacuation in the Rapid City, South Dakota, flash flood seemed to be a function of warning belief, itself a function of confirmation. After receiving several warnings, mass-communicated messages were found to be a strong predictor of warning confirmation. These authors argue that evacuation could have been maximized in Rapid City had additional warnings been issued through the media broadcasts. Mileti and Beck (1975) also conclude that time may be the central variable in explaining behavior elicited by warnings in predisaster settings; and they suggest that an additive evacuation model be developed to consider the variables of time, number of warnings given in specific circumstances, and the type of disaster.

Who issues the orders affects evacuation response. Warnings delivered through personal modes by emergency workers are the most effective (Gruntfest, Downing, and White, 1978; Graham and Brown, 1983). In a study of an unexpected flood in Denver, Colorado, Drabek and Stephenson (1971) found that messages from authorities were frequently interpreted as "orders" to evacuate by residents. Moreover, 70% of the respondents recalled receiving initial warnings from authorities.

Contents of warning messages were also found to influence people's response to warnings (Mileti and Beck, 1975; Gruntfest, Downing and White, 1978; NOAA, 1981). Graham and Brown (1983) found that most people responded appropriately by evacuating after the 1982 collapse of the Lawn Lake Dam in Colorado. In this instance, convergence behavior caused the death of one individual who went to the flooding river ostensibly to observe and help. Other people were also observed running to the river to take photographs and moving only when "they saw cars floating toward them. . ." (Graham and Brown, 1983). After the disaster, criticism was directed at national park forest rangers for issuing warnings that were too "gentle."

4.1.2.4 Evacuation experience

Family context, including linkage to extended families, is very important in helping to explain evacuation response regardless of age. Young's survey data (1954) notes the social-psychological significance of keeping the family intact during an evacuation experience. Drabek and Stephenson (1971) found four evacuation processes emerged from their data: (1) evacuation by "default," (2) evacuation by "invitation," (3) evacuation by compromise of family members, and (4) evacuation by decision. Furthermore, families were found to respond as units not as

individuals. They also found that warning messages received from family and friends were three times as effective as media sources in producing adaptive behavior, although 70% of respondents had received initial warning from authorities. But Drabek and Stephenson (1971) also report that "regardless of warning source, initial reaction was one of disbelief" (pg. 194). Gruntfest, Downing and White (1978) also noted that, rather than panicking, people tended to disregard warnings that interfered with their normal activities during the Big Thompson flood. During a flash flood in Johnstown, Pennsylvania, fireman reported that people were hesitant to evacuate because no one felt the threat of flooding (USDOC, 1977). Reluctance to evacuate during that 1977 Johnstown flood resulted in 76 people being killed. The next morning the convergence of spectators gathering to view the floodwater created huge traffic jams in the downtown area of Johnstown.

Suggestions that sensitization by recent threat experience influences evacuation response have also been researched. Quarantelli (1980) has noted that experiencing a crisis may sensitize individuals to the signs that would indicate a possible recurrence of the threat. Evidence indicates this may lead to increased belief but not necessarily to actual withdrawal behavior. Graham and Brown's study of the Lawn Lake Dam Failure (1983) suggests that information about the tragic flood three years previously in nearby Big Thompson Canyon had sensitized people to heed warnings and take appropriate action. Graham and Brown (1983) also noted that motel and resort owners received oral warnings directly from officials and that most people remembered receiving more than one warning to evacuate. In the Danzig et al. study (1958) of a rumor which caused unnecessary evacuation of a recently flooded community in Connecticut, flight was confined to people who lived in an inherently dangerous area. On the other hand, the study presented evidence that some firemen had sounded sirens and knocked on doors telling people to evacuate prior to denial of the rumor. Since belief was found consistent across the population while flight was confined to those at possible risk, Danzig et al. concluded that geographical proximity to the anticipated threat was the important factor in evacuation decisions. Interestingly, the same study found that officials, acting in accordance with their assigned tasks rather than personal responsibilities, asked people to wait for verification before leaving. Some studies indicate that familiarity with the environment does not necessarily increase precautionary or appropriate responses to flooding. Studies by Gruntfest (1977) and Gruntfest, Downing, and White (1978) found that familiarity with Big Thompson Canyon did not significantly elicit appropriate actions. Long-term residents of the canyon did not believe a flood of the projected magnitude could occur, and many ignored warnings because it was not raining when they were alerted. People disregarded what appeared to be false rumors and warnings that could not be confirmed, lacked specific information, or required specific actions such as climbing rock walls (Gruntfest, 1977).

Whether demographic variables significantly impact response to flood warnings is unclear. Personality, age, sex, group context, group attitudes, and socioeconomic status were all found to affect responses to the Big Thompson flash flood (Gruntfest, Downing, and White, 1978). Yet

Danzig et al.'s (1958) analysis of evacuation behavior in the case of a rumored flood report found no relationship between education and age with either the source of attempted confirmation or the likelihood of seeking confirmation before evacuating.

In flooding disasters, statistics indicate that older people die in proportionally greater numbers than would be expected. Hutton's analysis (1976) of the Rapid City flood indicates that the elderly receive as much advance warning notice as other segments of the population but, at the point of impact, may be less likely to respond appropriately because of decreased resources. Thus, lack of resources, such as diminished physical faculties, prevent or hinder elderly individuals from exiting a hazardous situation, not the lack of warnings. Perry, Lindell, and Greene (1981) found the elderly do not constitute dependent groups which hamper evacuation efforts.

Regarding ethnicity, Perry, Lindell, and Greene (1982a) present strong evidence that groups of Mexican-Americans and blacks respond differently from Anglos and that minority groups suffer disproportionately from natural hazards such as flooding. They attribute the difference to perceived personal risk, skepticism regarding the warning message, and the perceived adaptive response. Minority citizens receive, interpret, and respond to warnings differently than major population groups. Mexican-Americans are more skeptical than Anglos about believing warning messages regardless of specificity of the message. The same message elicited different interpretation regardless of warning belief and perceived personal risk. As a result, Mexican-Americans were less likely than Anglos to evacuate.

4.1.2.5 Planning issues

Experience with ongoing threats has been linked to the development of disaster subcultures. Hannigan and Kueneman's (1978) Canadian data on anticipated flood emergencies illustrates the complexity and extensiveness of the growth of disaster subculture at the organizational level. Where flooding occurs as a seasonal hazard or remains a recurring problem or where flood mitigation measures are less effective, the saliency of flooding does not decrease. When public organizations, such as the Floodway Mitigation Project in Canada, have been effective in decreasing the threat, they have found that public concern decreased. This has important implications for future emergency planning. For example, Hannigan and Kueneman (1978) found that, although the public was generally disinterested in disaster preparedness, the respondents were split regarding the role of government in regulating building in floodplains and in extending relief to flood victims.

The concept of a flood disaster uniting a community has been advanced and generally discounted. Kutak (1938) argued early on that crisis tended to blur racial and status differentials with the community being stronger after the disaster's impact. A study by Perry and Mushkatel (1984) regarding the permanent relocation of a town consisting

entirely of minority residents suggests that a community must first have strong social networks and social identity in order to survive permanent dislocation. Kai Erickson's earlier work (1976) on the Buffalo Creek slag dam failure emphasized that the loss of networks and social structure as a result of the impact of the disaster and during the rehabilitation phase totally destroyed the community. Unlike Erickson, Clifford's study (1956) of two communities flooded by the Rio Grande River found the persistence of normal social patterns including major values resisted disturbance in the emergency situation. Important normal social interactions remained the norm in the disaster and afterwards. Clifford argues that communities characterized by emphasis on familial, traditional, and personal orientations will resist interfamily aid which will hamper coordination of emergency activities.

Whether the elderly require more attention in evacuations and during the rehabilitation phase following flooding is discussed in the literature. Poulshock and Cohen's (1975) work concerning flood victims indicates that few of the elderly evacuees (15.6%) moved initially to an evacuation center but that 88% had moved at least once during the next year, 68.2% had moved at least three times, and 31% had moved four times in the year following the flood. The study also found that some housing for the elderly had improved over the pre-flood conditions. Despite indications of chronic physical problems in more than half of the respondents, the perceived needs of the elderly were for "hard" services outside the home such as housing, increased income, and transportation, and there was relatively little need for "social services."

That most flood victims take refuge in homes of relatives rather than official centers has been known for some time (Young, 1954; Drabek and Boggs, 1968). Drabek and Stephenson (1971) found that a little over 3% of their respondents stayed in public shelters. Young (1954) examined the role of kinship in British flood evacuations and found that most evacuees preferred refuge with relatives rather than using public shelters. Kinship ties tended to weaken as distance increased however.

Lack of experience in dealing with disaster is the largest problem of local leaders in post-disaster periods (Cochrane et al., 1979). Cochrane et al. argue that flood insurance is the key to a recovery program that forestalls similar use of flood-prone lands but that the program must be mandated by some agency or institution to be effective. Such politics often interfere with the development of evacuation plans for future events. Probably one of the most effective programs to reduce flood loss has been that of New York State which has developed technical manuals with the express intent of coordinating state, local, and private sector programs regarding flood warning and evacuation planning (see Flood Loss Reduction Associates, 1984a).

4.1.3 Hurricanes

4.1.3.1 Behavioral issues

Confronting a hurricane threat is difficult at all system levels of society because many of the evacuation issues are linked to the inherent ambiguity of weather forecasting of unpredictable storms. In hurricane evacuations, this is further complicated by the time dimension which affects decision making of both individuals and emergency management personnel differently from other natural hazards. Determining the time to issue evacuation warnings imposes certain restraints on emergency management officials. Furthermore timing influences the decision-making processes differently because evacuation times to safe areas varies by predicted intensity of the storm, storm direction, and population-at-risk during time of threat. At issue is the need to provide all persons-at-risk the opportunity to evacuate. Thus, authorities must calculate the maximum evacuation time including estimations of the reaction times of residents and the travel time involved in reaching a safe shelter (Simpson, 1980). For the individual, information about the particular storm threat affects perception of personal vulnerability which in turn motivates evacuation decisions (Baker and Carter, 1984). Information about hurricane hazards as well as specific site exposure is then translated into an individual assessment of vulnerability from which critical decisions are made about protective actions.

Other temporal issues relate to the actual hurricane landfall site. The impacts from hurricane landfall predicted for low-tide differ from those at high tide or when accompanied by seasonal fluctuations. Likewise delaying or dawdling storms present ambiguous situations which may result in multiple or unnecessary evacuations, a problem that emergency managers greatly fear in view of the political repercussions. The frequent tornadoes following in the unsettled wake of hurricanes also precipitate different forms of protective actions, both at the individual and organizational levels. Ruch and Christensen's experimental studies (1981) found that 72% of the people in Galveston, Texas, feared hurricane-spawned tornadoes more than hurricanes themselves. Few communities provide for the possibility of in-place accommodation for people facing the threat of a tornado (Simpson, 1980), leaving those that do not evacuate in time without options. Furthermore, persons failing to evacuate may later complicate emergency procedures by forcing emergency personnel to devote expensive resources to rescues and/or search and recovery efforts.

High population densities in coastal barrier areas with limited access routes further exacerbate evacuation procedures and place heavy burdens on decision-making personnel. Simpson and Riehl (1981) note that massive relocation of populations under threat is problematical where existing conditions include long expanses of two-lane highways, highways subject to early flooding, constricting bridges and causeways, or residential development that doubles or triples the population on holidays or during certain seasons due to tourism.

4.1.3.2 Risk and risk perception

Judgments about the risks from a hurricane threat differ with the empirical evidence indicating that the percentage of people who evacuate when warned about a hurricane threat varies by locality. Some storms generate only a 20% evacuation rate (see Davenport, 1978) (e.g., Hurricane Carla, 1961). On the other hand, the Louisiana Department of Public Services evacuation behavioral survey (1984) found that, regionally, over 91% intended to evacuate during a hurricane emergency. Clark and Carter's (1980) findings indicate the range of actual responses resulting in evacuation are influenced by the saliency of the hurricane warning and the information contained in the warning. The ease of obtaining the information and the perceived reliability of the source are also influential factors.

For the individual deciding about what protective action to take, information about the specific storm threat affects perceptions of self-danger which then motivates evacuation decisions (Wilkenson and Ross, 1970; Baker and Carter, 1984). Information about hurricane hazards in general as well as specific site exposure is then translated into an individual assessment of vulnerability from which critical decisions are made regarding appropriate protective actions. In any area, not all persons-at-risk can be expected to leave. On the other hand, the number of people leaving voluntarily on hearing of a possible storm is also largely unknown.

Demographic and life cycle variables affect adaptive behavior to hurricane warnings. Whether one is alone, married with or without children, elderly, attached to community, or a homeowner are reflected in response patterns (Carter et al., 1983; Moore et al., 1964). Length of settlement and prior experience with benign storms also contributes to complacency regarding hurricane threats and may hamper evacuation efforts. The study of warning response at the University of Minnesota (Leik et al.; 1981; Carter et al., 1983; 1979) found that (1) single residents living alone are less likely to respond to either official or unofficial statements irrespective of their perceptions of risk and instead respond to their social contacts in considering evacuation, (2) married couples with or without children are equally likely to respond to official statements although those without children are equally likely to respond to unofficial ones as well, (3) married couples with children are much less likely to respond to social contacts and to rely more heavily on their perception of the risk of storm surge flooding, confirmation of threat, as well as additional information in deciding to evacuate, (4) couples without children and single residents are more likely to evacuate with no additional incentives, once having considered evacuation, than couples with children, (5) single residents are more likely to evacuate on the basis of prior risk perception, once having considered evacuation, than couples without children, and (6) couples with or without children are more likely to evacuate on the basis of their perception of the likelihood of flooding, once having considered evacuation than single residents.

The behavioral patterns involving preferred destinations appear consistent with other natural hazards findings. A survey by the Louisiana Department of Public Safety (1984) found the majority of potential evacuees intended to go to a friend's or relative's house or to a motel/hotel rather than to seek public shelter in the event of a hurricane threat. Only 25% of those surveyed thought they would use public shelters. The Louisiana study also found a significant discrepancy between the high degree of expected evacuation and the self-reported past evacuation experience. The study found that people with previous hurricane experience who had never evacuated were less likely to intend to evacuate in the future than those with previous evacuation experience or those who were novices to the area. Moore et al.'s (1964) finding that recent experience is the most important variable in accounting for differences in response to hurricane threats suggests people cognitively relate current threat to their known (i.e., past) experience in evacuation decisions. Both Windham et al. (1977) and Wilkinson and Ross's (1970) work support the finding. Ruch and Christenen (1981) found evidence that, for individuals with prior hurricane experience, knowledge of evacuation or other protective strategies of surrounding businesses or organizations was effective in stimulating withdrawal behavior.

In simulation exercises, Christensen and Ruch (1980) found evidence that actions of neither friends nor strangers affected an individual's response to warnings. In their experiments, public response appeared to be most effectively stimulated by a combination of hurricane-related material including testimony and information regarding the threat or fear, with fear being the most effective.

Resources, including prior defensive activities and plans, affect the type of coping actions selected (Perry and Lindell, 1980). Perry and Lindell (1980) suggested that developing the incentives of warning-confirmation centers, family-communication centers in shelters, and publicized safe areas or routes in advance of events would encourage evacuation. Publicizing evacuation routes in advance and developing warning messages for media publication are recommendations included in FEMA's guidelines. Perry and Lindell (1980) point out that successful pre-evacuation programs do not directly save lives; however, they can prevent loss of property and disruption of social networks which will aid post-impact recovery efforts.

To allow complete evacuation of areas-at-risk, emergency managers must know the minimum time required to notify the general public in order to avoid liability concerns. Hurricane watches or warnings are issued by the National Weather Service (NWS), but the ordering or advisement of evacuation is subject to individual state mandates and/or local officials' legal obligations. The NWS regional storm warnings along with calculated hurricane landfall probabilities frequently cross political boundaries, thus presenting additional problems for emergency personnel who must determine specific landfall areas. Baker (1986) found that when warnings to evacuate "split" counties, Florida officials experienced difficulty because most counties were prepared to respond only on a county-wide basis. The trend by the National Hurricane Center to limit

use of hurricane watches directly impacts local emergency plans (Pinellas County Department of Civil Emergency Services, 1986). Other problems ensue when NWS advisories (in attempting to give a detailed analysis of a storm's progress) provide information which can be interpreted by area residents and media personnel as "all-clear" signals rather then the publicizing of an erratic storm.

4.1.3.3 Warning experience

As during other threatening situations, the media plays a major role in alerting the populace and providing information for residents. However the media has been criticized about the type of information provided. During Hurricane Elena, media representatives who were present at emergency executive meetings issued premature statements even when told to wait (Pinellas County, 1986). The same Pinellas County study found that conflicting information had been given to the public about bridge or road closings and openings. Simpson and Riehl's (1981) assessment of hurricane impacts noted that the lengthy warnings from the NWS during Hurricane Audrey in 1957 were edited by media personnel to leave out specific explicit messages identifying areas that coastal residents should evacuate. The research, however, does not differentiate between viewers who watched local and those who watched national coverage of the events which could influence who gains what information. The Pinellas County Study (1986) found that hurricane warnings were not carried on all cable stations nor were they available in writing for the hearing impaired--a problem in Florida with its high percentage of older residents.

Because of storm ambiguities, the most potentially dangerous information that can be given during warnings is a specific but inaccurate landfall location. A computerized system for estimating hurricane probabilities has been introduced to diffuse the risk area (Carter, 1983). However, the use of probabilistic information is questionable. Baker (1984b) found that many of the 100 emergency professionals questioned in a survey had no clear idea of how to use the factors in making evacuation decisions or had misconceptions regarding the use of probabilities. A later study by Baker (1986) found that the computerized systems were <u>not</u> utilized by Florida officials during Hurricane Elena. Guides by USFEMA (1983, 1984b) as well as articles (see Simpson et al., 1985; Ramini, 1985) have attempted to alleviate this problem by giving emergency managers specific instructions in understandable terms. SLOSH, the acronym for the Sea, Lake and Overland Surges for Hurricane model, is a computerized model for estimating areas at risk from storm surge. Ruch (1983) has utilized the model extensively in determining threatened areas along the Texas coast. Berke and Ruch (1985) utilize a computerized system to simulate hurricane losses based on two models: exposure, as evidenced by land use patterns, and hazards, as represented by wind speed and surge patterns. The system uses a computerized-geographical information system to generate a standardized data base for the spatially oriented data. Coupled with exposure and vulnerability models and damage algorithms, the system identifies location and extent of losses as well

as hurricane-prone land. The identification of the exposed population and buildings is based on regional land development scenarios that distribute growth among census tracts based on an attractiveness rating. Again the research does not indicate the extent to which the computer models are actually utilized during an emergency, especially as lifelines including electricity and telephone lines are frequently interrupted by severe storm activity.

During Hurricane Alicia (1983), the first storm in which the NWS used probability forecasts in determining landfall, the public appeared to understand the concept of probabilities (Savage et al., 1984). However, experimental research by Baker (1984a) in Florida indicates that, except in low-threat situations, issuing probability forecasts publicly has little or no effect on the individual's decision to evacuate. Baker's study (1984a) found that the most important variable was the local officials' statement advising evacuation whether or not probability forecasts were available. Evacuation procedures may be further complicated by who should be the official warning agency. When Florida's governor called for voluntary evacuation prior to Hurricane Elena's landfall without the coordination or knowledge of Pinellas County, officials had problems in opening shelters prior to evacuee arrivals (Pinellas County Department of Civil Emergency Services, 1986). In response to the governor's advisory order, an estimated 2000 evacuees congregated outside shelters before they were opened--a situation which later restricted emergency vehicles access to the shelters.

4.1.3.4 Evacuation experience

Timing, warnings, and getting people to move out once warned are all problems faced by emergency managers at the organizational level (Baker, 1980). Assigning evacuees to designated shelters does not always work either. The Pinellas County study (1986) found overcrowding occurred in some shelters because people did not always go to assigned shelters. Another Florida study found that knowledge of hurricane terms as published by NOAA and knowledge of the location of public shelters were unassociated with evacuation decisions (Baker, 1979).

Although researchers have examined residential behavior during a hurricane threat, most analyses have been made after the threat had passed and have not included actual observation of residents' actions. It is clear that not everyone will evacuate even though they are warned, but those in the most hazardous areas will withdraw to safe areas (Baker et al., 1976). Baker and Carter (1984) used a perceived benefit/cost analysis to investigate decisions to evacuate during a hurricane threat. This study found that coastal residents use whatever information is available--faulty or correct--to determine whether or not to evacuate. Quarantelli (1980) has noted that research on evacuation experience has not been separated from the general disaster experience.

In terms of appropriate actions at the individual level, it appears that the most important information regarding hurricane hazards is the

site-specific vulnerability of one's own residence (Baker, 1979). Giving the public information such as "areas near the coast will be flooded" significantly reduces evacuation rates (Leik et al., 1981; Baker and Carter, 1984). Thus, local official warnings or advisements should be as specific as possible--naming neighborhoods or streets when practical (Baker and Carter, 1984). Although withdrawal in areas adjacent to the coast is consistently high--over a 90% evacuation rate (Baker, 1983). Non-coastal, but still flood-prone, areas are evacuated at a much lower rate. When Hurricane Eloise struck Florida in 1975, Baker et al. (1976) found that 56% of the residents evacuated the inland flood-prone area as opposed to 86% of the beach-front residents. Another empirical study by Baker (1979) reexamined four previous studies of hurricane evacuation behavior (Moore et al, 1963; Wilkinson and Ross, 1970; Baker et al., 1976; and Windham et al., 1977) and found only one commonality--the likelihood that one will evacuate increases if one's neighbors evacuate. Otherwise, findings were not consistently conclusive across the studies. No conclusions regarding the future enhancement of evacuation propensity were available from the study (Baker, 1979). The importance of social ties is affirmed by Killian's early study of Hurricane Florence. Killian found that should the majority of a neighborhood not evacuate, individual families tended to ignore orders to evacuate and "ride it out" (Killian, 1954).

The Bates et al. (1963) longitudinal research study conducted between 1951 and 1961 examined the effects of Hurricane Eloise. This study indicated several reasons why residents did not evacuate: (1) disbelief in the storm's threat, (2) conflicting and misleading media reports regarding the storm's landfall times, and (3) lack of experience with the magnitude of the storm surge. As a result of this storm, approximately 1200 people were evacuated from waters, two-thirds of which were rescued by U.S. Army or oil company helicopters. In addition, blacks suffered significantly greater impacts than Anglos--black deaths averaged 322 per 10,000 total population as opposed to 38 Anglo deaths per 10,000 total population. The study found the concept of therapeutic community as outlined by Fritz (1961) useful only in the immediate post-impact phase of recovery and not applicable to the long-range analysis of social change.

4.1.3.5 Planning issues

Evacuation policies interface with political strategies in maximizing citizen safety. Vertical evacuation or in-place shelter during hurricanes has been discussed as a means of reducing evacuation times, eliminating extensive transportation planning, or as an alternative response to a fast-moving or unpredictable storm threat. Questions about the certification of safe structures, security, liability, and the right of individual owners to refuse shelter to potential evacuees remain unanswered (Simpson, 1980). Baker (1980; 1983) cites a number of other problems affecting the use of vertical shelters. First, there is the potential for overcrowding of evacuees if the option is publicized prior to an event. Second, the possibility exists for stranding those evacuees

without essential life-support systems. Third, structures could possibly sustain roof or window damage during very severe or unusual storms causing further problems for evacuees. In three recent hurricanes, a common inadequacy was the lack of knowledge about the availability and safety of protective shelters (Committee on Natural Disasters, 1985). Baker (1980) argues that another option exists to optimize evacuation and shelter capacity. He states that "impossible evacuation situations" can be presented in the first place through the use of controlled growth policies which reduce the number of people-at-risk who need to leave an area under threat.

For planning purposes, estimation of evacuation times have not been based on actual counts of vehicles leaving an area. Other measures such as the number of personally registered vehicles or surveys to indicate intended behaviors have been used for such projections. Ruch (1981) bases his estimations for modeling evacuation times on surveys of resident's intentions to use personal vehicles (1.3 to 1.6 vehicles per household), but the assumptions used in the estimates have not been empirically tested. In technical reports using SLOSH models for estimating evacuation times in Texas coastal areas, Ruch argues that there will be a three-hour delay once the warning is instituted: one hour to issue the warnings, one hour for people to prepare to leave, and one hour to prepare monitoring systems to maximize evacuation routes. Estimations of minimum evacuation times cannot assume full utilization of roadway capacity over the entire evacuation time, anticipate the use of vehicles other than those necessary for evacuation, or make appropriate adjustments for tourists in the vicinity. Specific areas need delimitation so only those residents subject to actual threat will evacuate. Ruch's estimates are based on initial evacuation prior to penetration of the storm surge or the advent of high winds. Protective actions for tornadoes spawned by "old" hurricanes are not mentioned in preparedness planning, nor are secondary or multiple evacuations that might be necessary because of unsanitary or unsafe conditions following the initial storm's departure. Ruch (1981) does note that differentials exist between overall evacuation estimates and the actual time it may take a vehicle to move through an area, but the assumptions are unclear as to estimated times or distances involved in reaching "safe zones."

A theme running through hurricane evacuation planning is that of liability associated with the obligation of public officials to provide an opportunity for all residents to leave a threatened area (Urbanik, 1980). This concern is reflected in the conservative projections of vehicles per capita and population numbers. Other hazard research suggests families act as units in emergencies. This finding goes counter to assumptions about family units using more than one car during evacuation, especially if the evacuation is viewed as temporary (as during a hurricane threat); thus it may be unrealistic for planning purposes. In questioning people about their relocation during a hurricane emergency, researchers have not focused on (1) types of vehicles actually used; (2) whether residents traveled alone, with neighbors, or in family groups; or (3) whether or not pets were included. The estimations of evacuation rates, rather than focusing on people, appear to focus on

vehicle populations. We did find evidence that some warning messages issued by officials included suggestions that families use only one vehicle when leaving. Urbanik (1980) does suggest warning residents that 50- to 75-knot winds could precede landfall by as much as 10-20 hours. Such winds can overturn trucks, motor homes, and vehicles with trailers, and this information should be included in warnings to promote evacuation compliance. Just as people underestimate hazards due to the velocity of storm surge and floodwaters, the problems from the gusting high winds of hurricanes, especially on open roads is also underestimated.

The concept of a "disaster subculture" as a mechanism for coping with ongoing or frequently recurring hazards has occupied researchers. Work by Davenport (1978) on individual responses to hurricane warnings indicates that protective actions (such as the Galveston seawall in Texas) taken by the community at large may give residents a false sense of security and may discourage future individual evacuation efforts. Length of settlement in a hurricane-prone area also contributes to complacency regarding hurricane threats. Forrest (1979) argues that residents of New Orleans developed a disaster subculture because repeated threats and impacts were dealt with through effective community mobilization when the threat occurred. This may be overcome, in part, by implementing a hazard awareness program. Christensen and Ruch (1978) analyzed the effects of brochures and electronic media presentations on hurricane awareness and planning. Their study indicated that radio had little impact, brochures enhanced knowledge, and television increased belief in the destructiveness of hurricanes. Brochures also stimulated people to pre-plan an intended evacuation route.

Schaffer and Cook's (1972) survey after Hurricane Celia found that most middle- and upper-income residents did not evacuate from the area and that most property losses were covered by insurance (cited in Quarantelli, 1980). Schaffer and Cook question whether this attitude and experience may bias future community decisions to implement loss-preventive mechanisms. Wendall (1980) points out that the existence of responsibility is the essence of liability and that the public may come to justifiably rely on governmental actions as an established response to threat. This, in turn, may change the liability regarding hazardous threats.

At the organizational level, officials' fear of "crying wolf" is not substantiated in the behavior of the public in such situations (Savage et al., 1984; Baker and Carter, 1984; Committee on Science and Technology, 1984). People tend to blame false alarms on outsiders rather than on the local officials who issued warnings (Rayner, 1953). The Committee on Science and Technology (1984) did note that the "cry wolf" syndrome had affected decisions to issue evacuation warnings when Hurricane Alicia struck the Galveston/Houston area in 1983. Emergency decision makers are often reluctant to issue evacuation warnings if they feel that evacuees have insufficient time to evacuate (Rayner, 1953; Savage et al., 1984). Officials are less reluctant to issue an evacuation order if a previous order was successful (Treadwell, 1962). On the other hand, Forrest (1979) found that hurricane disasters may act as impetus to set in motion

new response patterns. As in the literature on other hazards, separating the evacuation experience from the overall disaster and recovery periods would facilitate the research efforts.

4.1.4 Tsunamis

4.1.4.1 Behavioral issues

The ambiguity surrounding tsunamis, or tidal waves, results in part from their geophysical uniqueness and relative infrequency. The obscurity that surrounds their origins from undersea earthquakes is coupled with their unpredictability. Not all undersea movements create the energy needed to generate a tsunami, but all have the possibility of generating a tsunami with high potential for death and destruction.

Furthermore, tsunamis seldom provide warnings, other than a drop in sea level immediately prior to wave onset, to alert residents to a potential threat. Thus residents must rely on local officials to issue warnings and to institute evacuation procedures. On the other hand, emergency officials in coastal areas that are subject to tsunami inundation are hampered by lack of direct contact with the threat. They must rely on outside frequency distant sources for information on when to issue warnings. Thus the issues of evacuation are complicated by low event frequency, high disaster potential, and lack of adequate sources for confirmation.

4.1.4.2 Risk and risk perception

Investigating a tragic earthquake and tsunami that hit the Alaskan coastline, Hass and Trainer (1974) conducted three different educational pilot programs with one control group to determine the effectiveness of the tsunami educational programs. They concluded that intensive short-term public education efforts offered little hope of reducing losses of life or property during tsunamis. They found that none of the programs had any significant effect on the resident's knowledge of tsunamis, how they felt regarding the reliability of the warning system, nor their expressed behavioral intentions when faced with a future tsunami threat. The only significant improvement was in the respondents' perceptions regarding the severity of the tsunami hazard. This improvement was noted in the two programs which utilized a direct personal contact approach and the mass media.

4.1.4.3 Warning experience

Bonk, Lachman, and Taksuoka (1960) report on the response to the sounding of sirens to alert the residents of Hilo, Hawaii, about a tsunami threat. Ninety-five percent of their sample heard the siren, but interpretations of what the siren represented varied. Only 32% evacuated their homes immediately, 45% waited for further information including

waiting for another warning. Forty-four percent continued their normal activities. Fourteen people reported that they were "sightseeing" at the time of wave impact (the third and most destructive wave struck Hilo at 1:05 a.m.). Of the 197 people who did not evacuate, 57% were pinned inside wreckage and 25% were injured.

Ethnicity appeared to affect the behavioral response to the sounding of sirens in Hilo (Bonk, Lachman and Taksuoka,1960). Of the 34 non-English-speaking persons interviewed, only 21% evacuated; whereas, twice that amount or 42% of those who spoke English evacuated. In addition, formal education was not significant in distinguishing among behaviors (Lachman, Taksuoka, and Bonk, 1961).

Residents of coastal areas may associate earthquake movements with the risk of a tsunami. Haas and Trainer (1974) found that over half of the residents (58%) who were surveyed after the Sitka, Alaska, tsunami had thought of the possibility of a tsunami after feeling the earthquake. Eighteen percent learned of the threat from the radio, 14% learned of the threat through face-to-face contact, but only 2% were alerted by loud-speakers on cruising police cars. After learning of the possibility of the tsunami, 23% immediately evacuated, 26% continued their normal routine. The remaining respondents waited for additional information, sought to contact family members or began to prepare to leave. Eighty-two percent reported that they did not check on the accuracy of the initial warning. About half the respondents recalled a verbal message calling for immediate evacuation, but only 50% remembered that safe areas were identified in the warning message. A few respondents could recall that other types of basic information were given in the warnings.

Yutzy's (1964) work describes the behavior of organizations in Crescent City, California, following notification of a possible tsunami due to the Alaskan earthquake (see Weller, 1967). No formal evacuation order was issued until after the third wave had hit the city. The result was 11 deaths and devastation of 29 city blocks. Officials credited the reluctance to issue evacuation orders to limited, ambiguous, and contradictory information on passage of the wave. Yutzy suggests less tangible factors, such as prior repercussions and ridicule created from issuing alarms that proved false, may have been critical in delaying prompt action.

4.1.4.4 Evacuation experience

In the Haas and Trainer (1974) survey of the Sitka tsunami, two-thirds of those who evacuated when warned took time to collect items such as pets, bedding, clothing, water, and personal possessions. Of those evacuating, 61% went directly to their destination and stayed there until an all-clear message was received. The remaining evacuees engaged in actions such as leaving from some other place but stopping by home before finally evacuating, leaving a safe place to check on relatives, or returning home and then going back to a safe place. About half of the evacuees indicated one or more things they would do differently the next

time a tsunami warning is issued. Intention to act faster was reported by 66% of evacuees.

Comparison of actual behavior to "what would you do" question previously asked in pilot studies indicated that fewer Sitkans took time to collect items they said they would take and that separated families did attempt to contact each other as had been previously predicted by intentions. Eight-two percent of those evacuating were family units, of which half were separated at some time before the evacuation was completed.

4.1.4.5 Planning issues

In examining two communities that had experienced a tsunami (one in the Hawaiian islands and the other on the Californian coast), Anderson (1966; 1969) found that fear of public repercussions and past experience with false alarms contributed to the reluctance to issue warnings in Crescent City. Anderson found that calling for an evacuation once an actual tsunami had materialized was easier and resulted in more cooperative response to warnings. The two communities, however, differed in their reactions to the tsunami event. The island community of Hilo, Hawaii, initiated a comprehensive review of emergency preparedness plans. They enlisted the aid of the scientific community and developed written plans that included the sounding of public sirens and a 24-hour radio broadcast system to which citizens could turn in times of threat. The California community, Crescent City, did not seek scientific feedback and made no changes in their warning system which relied on personal modes of issuing warnings to residents.

To reduce future tsunami losses, Bonk et al. (1960) recommended improved public education programs regarding the hazards of tsunamis, delineation of danger zones subject to tsunami inundation, and adoption of emergency vehicles to evacuate those not capable of leaving on their own initiative. They further stress that the public must be continuously reminded of the meaning of sirens and the appropriate behavior once the siren is sounded. The ambiguous messages given through the media channels during the emergency pointed out the need for centralized information sources and warnings that are given in several languages when needed. After reviewing Crescent City's action--ordering a warning to evacuate only after the third tidal wave had hit the city, Yutzy (1964) notes, "Implementation (of a warning to evacuate) does not occur in a social vacuum but in context of past, present and future social relationships."

4.1.5 Volcano Findings

4.1.5.1 Behavioral issues

Although active volcanoes are found throughout the world with some of the most famous ones located in the Hawaiian Islands, the American public had virtually no direct experience with hazardous volcanic threats until the Mount St. Helens eruption of 1980. Consequently, most of the recent research has centered on various behaviors elicited in response to this May, 1980, eruption. A major behavioral factor associated with the Mount St. Helens' disaster was the absence of belief of the scientific predictions that such an event would occur.

4.1.5.2 Risk and risk perception

Greene, Perry, and Lindell (1981) examined how perceived personal risk, warning belief, sources of information and individual adaptive plans influenced citizens' willingness to evacuate from the vicinity of the Mount St. Helens volcano following the early detection of seismic activity. The hazard posed by the possibility of an eruption appeared variable and was not fully appreciated until after the first major eruption (see also Perry and Greene, 1983). Environmental cues such as tremors promoted warning belief, but residents made no attempt to protect themselves other than preparing to evacuate (Perry and Greene, 1983). When awareness of the risk did increase, people had difficulty identifying specific threats of volcanism, relating instead to threats with which they were familiar (i.e., floods and mudslides).

Perry and Greene (1982a) explored the effect of information on perceived risk. Prior to the eruption of Mount St. Helens, high levels of perceived threat could be attributed to the frequency of receipt of information and to confidence that the information received was credible (Greene et al., 1981). Using data from three sites at varying distances from the volcano, Perry and Greene (1982a) found relatively uniform perception of threat, frequency and sources of information, and level of confidence regarding protective actions. They note that only 10% of the sample reported hearing information about the volcano as infrequently as once a day. Mass media dominated as primary sources of information with 95% of respondents mentioning TV, 81% citing newspapers and 87% naming radio. In contrast, only 70% reported getting information from friends and relatives, while 21% received information through direct contact with state, local, or county officials. Perry and Greene (1982a) suggest the results indicate a "vigilant dominant decision pattern" consistent with the Janis/Mann decision-making model. Furthermore, the high level of perceived risk indicated that residents considered the consequences serious if an eruption took place. Sorensen's research (1981) shows that residents were unwilling, however, to give the volcano a 100% chance of erupting.

Spatial patterns were examined as factors influencing the perception of risk. Close proximity to the volcanic threat increased stress levels

at Mount St. Helens but sensitized residents did not seriously consider evacuating permanently from the mountain (Leik et al., 1982; Greene et al., 1981). Denial actions relating to volcanic risk were found in studies of Hawaiian residents who live on volcanic slopes and who associate eruptions with unmet demands from a deity named Pele. Regardless of ethnic group, offerings were made to the volcanic goddess Pele in an openly acknowledged belief in Pele's existence (Lachman and Bonk, 1960). Lachman and Bonk did a study of residents' behavior during the 1960 eruption that caused the evacuation of 250 people from the small town of Kapoha, Hawaii. The study suggests that "security-seeking" behavior is unrelated to age, ethnicity, creed, or educational attainment.

Controversy exists over the effect of ethnicity on behavioral response to volcanic threats (Hodge et al., 1979; Lachman and Bonk, 1960). Hodge et al. (1979) found that decisions varied with ethnic group as to fatalism and belief in governmental actions. People living in the Cascades preferred individual coping strategies rather than relying on governmental actions, a behavior not feasible with the current legal restrictions concerning public safety on federal lands. After examining attitudes of both residents in Hawaii and the Cascades, Hodge et al. (1979) suggest that ethnicity affects response and that experience and/or age results in skepticism about volcanic threat. Furthermore, evidence of transference of threat by individuals to other areas of risk in the Cascades appears unlikely, although geologists consider Mt. Baker an active volcano and some areas were closed as precautionary measures.

4.1.5.3 Warning experience

Examining the normative functioning of the volcano warning system on the island of Hawaii, Sorensen and Gersmehl (1980) found that strong social and community networks existing among residents living under the active threat of volcanoes have contributed substantially to the effectiveness of warning systems. They found that experience with the hazard and credibility of key personnel with knowledge of the social structure, rather than organizational infrastructure, play key roles in the management of evacuations. Other aspects, such as an off-limits emergency operations center, reduce confusion and conflict in giving out warnings.

4.1.5.4 Evacuation experience

Perry and Green's (1983) data support the argument that as actual level of personal risk increases so does the likelihood of evacuation. Data from six communities within a 40-mile radius of the mountain showed that dissemination of information was generally through media sources. They found evacuees' destinations and modes of transportation support previous findings on other hazards. Primary destinations were the homes of kin or friends with most evacuees using a family vehicle (Perry and Greene, 1983). In the Toutle/Silverlake area of Washington where almost 88% of respondents evacuated, they found about 46% of respondents going

to homes of kin, about 30% going to friends with 95% using the family vehicle for transportation. In the Woodland area where slightly under 17% evacuated, 80% (or 12 of the 15 families questioned) reported they were called by a friend or relative offering shelter to which they subsequently evacuated. When warning belief was high, 46% evacuated compared to 22% when warning belief was low or moderate. Perry and Greene (1983) note that "when risk is perceived as low, virtually no one made preparations to evacuate," but protective actions were undertaken by half of those who perceived the risk as low. They further note that when personal risk was perceived as high no matter what the level of warning belief, almost all respondents made preparations to evacuate.

Environmental cues were strong predictors of evacuation. In the Toutle/Silverlake area, residents seeing the eruption accounted for 29% of evacuees. Just over 26% left after officials urged departure, and another 20% left when urged to do so by relatives. The high level of warning belief can also be attributed to environmental cues. Thirty-four percent made no attempt to confirm warning messages. Of those who did not confirm warnings, about 77% rated warning belief as high and about 16% as moderate. Perry and Green (1983) assert that findings from both studies show that personal risk bears a strong positive relationship to warning response because when the effects of risk are controlled, the magnitude of the relationship between belief and response declines.

Leik et al. (1982) have examined levels of individual and family stress due to the Mount St. Helens eruptions. Similar to conclusions regarding mobility of families living near earthquake hazards, the Leik et al. data indicate that few families interviewed evacuated and almost none considered moving away from the volcano's threat. Although residents intend to continue to live in the area, they remain apprehensive about the volcano's activities. However, stress levels and coping behaviors change consistently, given the distance gradient from the volcano. In further analysis of stress levels, the Leik et al. study looked at caseloads at mental health clinics and hospital rooms. Although caseloads did not increase at clinics after the eruption, the number of emergency room visits greatly increased following the major eruption. Leik et al. argue the public mental clinics are not geared to viewing stress as a collective problem and, therefore, cannot handle the stress problems associated with the volcanic threat through the usual health emergency structures.

4.1.5.5 Planning issues

At the organizational level, perception of risk prior to the eruption did not differ significantly from the public's perception (Sorensen, 1981; Saarinen and Sell, 1985). Saarinen and Sell (1985) interviewed 130 officials to determine their response to warnings about volcanic hazards. Mitigative measures taken during planning for the disaster indicated that adequate flows of information about the hazard existed, but most people including officials remained unconvinced that the volcano would erupt and did not evacuate. Saarinen and Sell (1985) found a "volcanic community"

had developed of people brought together by the shared experiences during the volcanic emergency. Both Washington state DES and FEMA were criticized for their weak role in the emergency.

The media, especially the national newscasts, were criticized heavily for their handling of the emergency situation and for interfering with organizational responses. Foxworthy and Hill (1982) discuss the problems the USGS had with keeping official reports from being distorted when interpreted by the media. Attempts by media personnel to illegally enter restricted or controlled areas also were documented. Foxworthy and Hill (1982) note that among those killed at the May 18 eruption were two reporters. Sorensen (1981) found that rumors were only a minor problem, but the media's penchant for news was a major problem for responsible agencies such as the USFS or the USGS.

Sorensen (1981) found that most state and local agencies were poorly prepared for the Mount St. Helens eruption even though evidence from the USGS had indicated an eruption was probable before the end of the century. Local officials' efforts to deal with the volcanic threat were hampered by lack of definitive and understandable information and agenda regarding volcanic risks and threats. As the eruptions progressed, organizations became more adept at handling the effects. The U. S. Forest Service (USFS), an agency noted for its extensive management of forest fires, facilitated a strong response to the impending eruption mainly because of its past experience.

Foxworthy and Hill's (1982) chronological account of the 100-day period prior to the May 18, 1980, catastrophic eruption of Mount St. Helens reveals the unique network features of the organizations faced with the volcanic threat. The study accentuates the interface between the scientific community and the various agencies responsible for protecting the public. The credibility and reliability of key actors within the USFS and the USGS provided local officials with enough support to enforce closures of volcanic areas even when ambiguity existed over the exact timing or magnitude of an eruption. As a result, fewer people were in the area of risk at the time of the major eruption.

A primary problem was deciding which agency was responsible for directing emergency operations, given a volcano threat. Frequently, the political process interferes with emergency management as happened in Washington state. The Hodge et al. (1979) study comparing management of volcanism in Hawaii and the Cascades noted that neither community had built-in operating procedures for coping with threats by organizations responsible for land management. Hodge et al. suggest that volcanic hazards should be viewed as ongoing community problems with educational programs designed to elicit support when evacuation or closure is necessary. They argue this would increase tolerance regarding the ambiguity of the potential threat when officials order future evacuations as precautionary measures. The lack of a state agency responsible for issuing warnings and coordinating responses to volcanic threat was a common theme at Mount St. Helens. Had the volcano not been under the jurisdiction of the USFS and their cooperation with the USGS not as cordial, the

coordination of activities to adequately warn and keep the public from the risk area might have been impossible. Saarinen and Sell (1985) point out the unique problems encountered with such hazards as Mount St. Helens or Three Mile Island and suggest a need for nationally organized networks of experts and field staff for assessing actual impacts and problems in local areas. The roles of federal and state officials and FEMA would be better defined and thereby understood.

4.2 BEHAVIORAL RESEARCH FINDINGS FOR HUMAN-INDUCED EMERGENCIES

The range of experience with human-induced hazards is much less than for natural hazards. This is likely due to the recency with which technological hazards have begun to create serious emergencies. Consequently, the number of studies that have been conducted on evacuation for this class of events is somewhat smaller than for natural events. We will, therefore, examine the findings in more depth.

One controversy regarding evacuation behavior concerns the similarity of behavior in natural and technological events. Some researchers maintain that evacuation behavior in response to events such as nuclear power emergencies is quite different than to natural disasters (Johnson, 1983; Ziegler and Johnson, 1984). Others maintain response patterns are quite similar (Stallings, 1984; Sorensen and Richardson, 1984). Perry (1983) suggests nuclear-power-related evacuations differ in that the threat is unfamiliar, that conflicting information is more probable, and that risks are correlated with distance from source. Growing evidence suggests that while evacuation behavior may differ with respect to the peculiarities of the event, the basic social process of evacuation is similar despite the hazard agent.

4.2.1 Nuclear Power Accidents

Evacuation behavior has been extensively studied at the one nuclear power plant accident that involved evacuation. The 1979 accident at Three Mile Island (TMI) nuclear power plant, Middletown, Pennsylvania, caused approximately 145,000 people within a 15-mile radius to evacuate. As many as 170,00 in the vicinity are estimated to have evacuated. The evacuee behavior is well documented and explained by the studies conducted following the incident. In addition, evacuation behavior has been studied using behavioral-intent-type surveys. Because these research findings concern only one nuclear power plant accident, the extent to which they are generalizable will also be discussed.

4.2.1.1 Evacuation studies of TMI

Results from three major surveys have been published concerning evacuation behavior at TMI. These include the "Michigan State Survey" (Ziegler et al., 1981), the "Rutgers Survey" (Cutter and Barnes, 1982), and the "NRC Survey" (Flynn, 1979). The latter has been used by others

to analyze evacuation behavior in more depth (Houts et al., 1984; Sorensen and Richardson, 1984). Surveys by Bartlett et al. (1983) have replicated the NRC surveys in addition to expanding the data base. Other surveys have been conducted regarding the TMI accident and have incidentally included evacuation in their findings (Goldsteen and Schorr, 1982).

Flynn's study was conducted for the U.S. Nuclear Regulatory Commission (NRC). Its chief limitation is the five-month period of time that elapsed between the accident and data collection. Questioning was retrospective, and intervening factors may have biased the results. The study focused on approximately 1,500 households sampled by random-digit dialing. The quota sample was stratified by distance from the plant with decreasing probability of selection. Because data were collected by telephone survey, families without telephones are not represented by the sample. An overall response rate of 75% is estimated.

The Flynn study is implicitly guided by a type of social impact assessment framework. This is reflected in the questionnaire design and presentation of results, which is exclusively descriptive. No attempt is made to explain evacuation behavior which is discussed in detail. The study contains a wealth of descriptive information about the effects of the accident on the local population.

The Michigan State study (Ziegler et al., 1981; Brunn et al., 1979), conducted shortly after the event, suffers primarily because of the accompanying inadequate research design. The methods section of the study suggests a random sampling procedure whereby respondents within 15 miles of TMI were selected. The sample was drawn from community phone books. Two communities beyond 15 miles of TMI served to stratify the sample for distance but are not representative of a more distant population and are not treated as control groups. Of 300 questionnaires mailed, 150 were returned for a response rate of 50%. This poor response rate and small size of the mailing limit the ability to examine behavior in terms of geographical effects, and the non-random sample impedes generalization of findings to a larger population.

The theoretical basis of the Michigan State study is again largely implicit and a posteriori. The authors use a stress model to describe evacuation behavior. Although it is largely void of psychological research on stress, it provides a reasonable and interesting hypothesis about the cause of evacuation behavior. The results of the study, however, are descriptive, and no statistical criterion is used to accept or reject the stress model suggested by the authors.

Cutter and Barnes (1982) use a random sample of 1000 households for a mail survey. Fifty households were drawn from 20 five-mile quadrants surrounding TMI using addresses from phone books. A total of 359 responses were received, yielding a response rate of 35.9%. The authors made no attempt to increase the response rate, to determine the cause of non-response, or to determine the representiveness of the sample. The self-selected sample should not be considered representative of the population around TMI. This makes generalization to the entire population at

TMI suspect which is unfortunate, given the study intent of portraying the social correlates of evacuation.

Again the model used to frame the research in the Cutter and Barnes study is largely implicit. The main strength of the study is that the framework appears to be derived from other empirical studies of response to disaster. Evacuation behavior is analyzed with several social characteristics and distance. Findings are based on chi-square tests of association. Results are well integrated with other disaster research findings.

A major problem of all three studies is their theoretical approach. None used an explicitly defined model to guide the analysis or test hypotheses. Only Cutter and Barnes linked their findings to a model that has more general applications. Ziegler et al. attempt to derive a theory from their study but fail to provide tentative support or refutation on empirical grounds for that theory. Flynn provides data which could be used for a more scientific approach, but it is not pursued. The thrust of all three reports was to describe how many people left for what destination rather than to gain an understanding of why people did so.

Of the three, only Flynn has an adequate sample to permit generalization to the TMI vicinity, although not without bias. Both the Cutter and Barnes study, and the Ziegler et al. study incorporate methodological problems which make any generalizations to the total population severely suspect. Of the three studies, only Cutter and Barnes have attempted to scientifically analyze the relationship between evacuation and explanatory factors. More robust and sophisticated techniques than those utilized would have strengthened their analysis. Even so, analysis is a posteriori and not guided by a theory.

4.2.1.2 Evacuation behavior at TMI

From the studies, we gain a good descriptive account of the evacuation. About 39% of the population within 15 miles of the plant evacuated. A small number of people evacuated at greater distances as well. Evacuation rates declined with distance and varied with respect to direction from the plant (Flynn, 1982). Within 5 miles an estimated 50 to 60% left (Flynn, 1979). Those who left stayed away a average of five days and traveled a median distance of 85 to 100 miles. Most evacuees went to friends and relatives (78%) or motels (15%). Flynn (1979) found that a few people used official shelters, whereas Ziegler et el. (1981) found that no one in the sample they interviewed used official shelters. Evacuation rates decreased as distance from the plant increased. Ziegler et al. (1981) also observed that as distance increased evacuees travelled longer distances but stayed away for a shorter time. The number of people who left and their destinations are thought to have been influenced by the time of the accident which enabled people to leave for the weekend (Smith, 1979)--the first nice weekend of the spring season.

Demographic characteristics of evacuees are well documented. Families with children were more likely to leave (Cutter and Barnes, 1982) particularly if the children were pre-school (Sorensen and Richardson, 1984). Seventy-one percent of the pregnant women evacuated (Flynn, 1979). Single-member households were less likely to evacuate (Cutter and Barnes, 1982). Older people were less likely to evacuate (Cutter and Barnes, 1982; Smith, 1979; Sorensen and Richardson, 1984). Evacuation was not associated with educational levels in any consistent way (Cutter and Barnes, 1982). People with neighbors who evacuated were more likely to evacuate (Cutter and Barnes, 1982) while those who knew a worker at the plant were less likely to leave (Sorensen and Richardson, 1984).

4.2.1.3 Risk and risk perception

People who evacuated were less satisfied with information being provided and perceived a greater threat to their safety (Sorensen and Richardson, 1984). Stated differently, evacuees felt more susceptible to damage from radiation and were more upset and threatened than non--evacuees (Houts et al., 1984). People left because they were concerned with safety (Ziegler et al., 1981), perceived danger (Flynn, 1979), heard conflicting information (Ziegler et al., 1981; Flynn, 1979), or wanted to avoid a forced evacuation (Flynn, 1979). People stayed because of conflicting information (Ziegler et al., 1981), an absence of clear and credible information (Lindell and Perry, 1983) there was no danger (Ziegler et al., 1981), they were waiting for an order (Flynn, 1979), or because no order was given (Ziegler et al., 1981). People perceived that the utility company was not a useful source of information and evacuated because of a lack of trust in that information. People, however, did not equate the lack of credibility of the utility as an organization with that of technical or scientific people within the utility or nuclear industry (Sorensen, 1984b).

4.2.1.4 Behavioral intent research

A telephone survey of 2595 people on Long Island was conducted to evaluate evacuation intentions of households who were given three brief hypothetical scenarios of nuclear power plant accidents (Johnson, 1984; Johnson and Ziegler, 1984a; 1984b; Ziegler and Johnson, 1984). These scenarios included a 5-mile sheltering recommendation, a 5-mile selective evacuation of pregnant women and children, and a 10-mile sheltering recommendation, and a 10-mile total evacuation. The authors' interpretation of the results of the survey was that many people who were not advised to evacuate will do so if an emergency occurs. In fact, people 50 miles away from the TMI site expressed an intention to leave. However, level of intent to evacuate, should a similar event occur, decreases with distance from the site.

Analysis of the data suggests that those who would comply with recommendations in the scenarios were younger people who were concerned

with nuclear risks. People who expressed an intent to go beyond the recommended action and who would evacuate were middle aged, perceived greater dangers, and lived farther away from the plant site. Those who intended not to take protective actions were older, perceived less danger from the nuclear power plant, and lived closer to the plant site.

The authors conclude from this study that evacuation in another nuclear plant emergency will resemble that at TMI. They label this phenomena of "over response" the "evacuation shadow phenomena." Several problems, however, rest with this logic. First, the scenarios do not resemble the type of information people would actually receive in an emergency. Thus, the survey measures response to an unrealistic situation. Second, a careful analysis of the survey questions suggests that respondents are led, or predisposed to respond with an evacuation intent. Third, the response categories offered respondents are incomplete and not mutually exclusive. Overall, the results of this survey approach should be treated cautiously in accord with its shortcomings.

4.2.1.5 Planning issues

Despite the high investment of research dollars and labor into the question of effects of the Three Mile Island incident, only two works have looked systematically at organizational behavior in an analytical way. Neither of these efforts, however, were actual scientific investigations. Nevertheless, both the work of the President's Commission on the Accident at Three Mile Island (Dynes et al., 1979) and that of the Special Inquiry Group of the Nuclear Regulatory Commission (no date) provide some conclusions and evidence as to what had an effect on organizational behavior, coordination, and effectiveness during the Three Mile Island incident. Summary statements of these observations follow. They fall into five general categories: (1) domain consensus and role specification, (2) communication, (3) planning, (4) funding, and (5) coordination.

(1) **Domain consensus and role specification.** A repeated set of conclusions voiced by those who investigated the behavior of organizations in the Three Mile Island incident concerned domain assumptions; who should do what, when they should do it, who was in charge, how things should get decided, none of which was clearly delineated. For example, a major conclusion of the Special Inquiry Groups of the Nuclear Regulatory Commission (no date) was that ". . . there was no effective, coordinated emergency response plan in the operational mechanism and responsibilities of interagency response coordination and command were clearly spelled out" (p. 1007). The President's Commission on the Accident at Three Mile Island (Dynes et al., 1979) made a series of observations that support the conclusion that domain consensus and role specification were weak. It was noted that problems were created by multiple jurisdictions in terms of knowing who should do what. Federal and state officials disagreed about the nature of the information on which to base evacuation decisions and other protective action decisions during the emergency. Other examples mentioned that local and county governments had the

primary action role from the point of view of other organizations. Yet no local community had assumed this role nor did any have an emergency response plan. Furthermore, the role of the Commissioners of the Nuclear Regulatory Commission and the specification of their decision-making process during the accident were ill-defined. The conclusion seems straightforward in that the lack of specification of jobs and consensus about tasks among organizations hampered the coordination of organizational response to the incident and lessened the effectiveness of response.

(2) **Communication.** Another conclusion of these two inquiry groups was that interorganizational coordination and effectiveness were reduced because of poor interorganizational information flow or, in other words, poor coordination. The Special Inquiry Group of the Nuclear Regulatory Commission (no date) found that the lack of a liaison person in the State Health Department constrained communication and deflated effectiveness. Effectiveness also suffered because the telephone communication system used by organizations was overtaxed and eventually broke down. The President's Commission on the Accident at Three Mile Island (Dynes et al., 1979) also pointed to communication as a cause of lessened interorganizational coordination and effectiveness. For example, the effectiveness of the Pennsylvania Emergency Management Agency (PEMA) was lessened when the Director of PEMA was excluded from interorganizational meetings. The President's Commission also pointed out that communication between the Nuclear Regulatory Commission (NRC) and the management of the utility was poor and that the NRC was not able to get a clear picture of the actual on-site conditions. From these and other observations, it seems reasonable to conclude that inadequate inter-organizational information flows served to lessen interorganizational coordination and effectiveness.

(3) **Planning.** A third general conclusion regarded the lack of prior planning on the part of organizations which retarded interorganizational coordination and organizational effectiveness. The Special Studies Group of the Nuclear Regulatory Commission (no date) noted that confusion existed over the size of the area to evacuate because of a lack of prior plans, that no local plans existed to carry out evacuation, and that the lack of local plans led to a less effective response to the emergency. This same conclusion was reached by the President's Commission on the Accident at Three Mile Island (Dynes et al., 1979: 15) in that a lack of plans that specified specific responsibilities led to a less effective organizational response to the emergency.

(4) **Funding.** The lack of plans was not entirely an oversight. The special Studies Group of the Nuclear Regulatory Commission (no date, p. 1024) sought to explain why there was a lack of plans at the local level. They concluded that the lack of funds was a major constraint to developing the plans.

(5) **Coordination.** The President's Commission on the Accident at Three Mile Island and the Special Studies Group of the Nuclear Regulatory

Commission both concluded that interorganizational coordination was poor in response to the emergency. Furthermore, no mechanism existed to coordinate the response of the various involved federal agencies (Special Studies Group of the Nuclear Regulatory Commission, no date: 1024). The President's Commission observed that interaction between the Nuclear Regulatory Commission, Metropolitan Edison, and state and local emergency organizations was inadequate for the development of emergency preparedness plans prior to the accident. Planning lacked an emphasis on coordination, and response was less than adequately coordinated. The lack of coordination hampered an effective response.

The incident at Three Mile Island, although studied extensively for other reasons, was not well studied from an emergency organizations viewpoint. Nevertheless, several studies provide some evidence to suggest the following set of conclusions about how organizations and their effectiveness can be viewed in such emergencies. First, organizational effectiveness in response to a nuclear plant accident will be reduced if domain consensus exists about which tasks an organization should perform when it is not clearly spelled out in preparedness plans. The lack of domain consensus also constrains effective interorganizational coordination. Second, effective and clear communication and the sharing of information between organizations are essential to response coordination and response effectiveness. Third, preparedness planning, although it is no guarantee, is essential for interorganizational coordination and organizational effectiveness. Fourth, funding for local communities to develop emergency plans will likely increase the odds that they will have such plans. Fifth, interorganizational coordination is essential for an effective response to emergencies caused by a nuclear generating station.

In wake of the TMI accident, a number of researchers have sought to evaluate the plans for nuclear power plant planning including the evacuation planning for TMI (Fisher, 1981); the effectiveness of warning systems at reactor sites (Sorensen, 1984); and the level and quality of interaction between utilities and off-site emergency planning organizations (Sorensen et al., 1984).

4.2.2 Hazardous Materials

4.2.2.1 Behavioral issues

Each year thousands of people evacuate because of spills of hazardous materials. Most spills or leaks occur at fixed plant sites or during transport. Moreover, these accidents are frequently associated with other events such as a collision, derailment, or fire. Combustion, detonation, simple temperature and atmospheric changes, and reactions between or among two or more hazardous material can increase the variable threats to people and property in geometric progression (Cashman, 1983). Often a dangerous chemical is involved, but munitions transport or hazardous waste also pose problems. Despite the large number of evacuations, few have been studied because of the rapidity of onset of the event and the randomness of accident locations.

Three major studies have been published that have used survey data to study evacuation behavior. One is the Mississauga, Canada, incident involving a train derailment which released chlorine gas (Liverman and Wilson, 1981; Burton, 1981). The Burton (1981) report is based on six surveys of the public and businesses. Using semi-structured interviews, the author studied the responses of key actors and members of the public who represented special populations. A second incident with hazardous propane also involved a train derailment near Puget Sound, Washington (Perry and Mushkatel, 1984). The third study investigated a fireworks explosion in Houston, Texas (Killian, 1956). Another type of study (Fowlkes and Miller, 1982) used a small interview sample (63 people) of Love Canal, New York, homeowners to study the behavioral response to toxic waste underground migration that resulted in closure of a residential area and permanent relocation for many homeowners.

At the organizational level, the Disaster Research Center (DRC) has analyzed 20 chemical accidents (Quarantelli, 1981a). This includes detailed case studies of three incidents (Gray, 1981b) and an in-depth study of the Taft, Louisiana, explosion at the Union Carbide Plant (Quarantelli, 1983). The Mississauga incident has also been analyzed from a police organizational perspective (Scanlon, et al., 1980).

4.2.2.2 Risk and risk perception

Other than the Love Canal situation, the studies indicate no major problems with getting people to evacuate. People tend to view the evacuations as inconvenient rather than threatening (Burton, 1981). People are more likely, however, to evacuate when they perceive the situations to be personally threatening (Perry and Mushkatel, 1984). Over time, the ambiguity and lack of clarification of the perceived toxic-chemicals threat caused the Love Canal residents to mistrust officials who were handling the risk situation (Fowlkes and Miller, 1982). When officials do not make decisions in the face of an uncertain accident situation, nongovernment participants (e.g., radio stations) have expanded their role and have taken charge of disseminating evacuation recommendations (Fitzpatrick and Waxman, 1972).

At Mississauga, a number of residents evacuated before official orders were issued (Liverman and Wilson, 1981). The main stimuli for evacuation were media reports and police requests (Liverman and Wilson, 1981). Evacuation occurred outside the official zones (Burton, 1981) but resulted in no negative consequences. Multiple moves were common, with 25% of the evacuees having to evacuate more than once (Liverman and Wilson, 1981). Evacuation decisions were made quickly. Over 50% of the evacuees left within 30 minutes, and 80% were gone before an hour had passed (Burton, 1981). Most residents (97%) did not regret leaving and indicated they would do so again under similar circumstances, even though it was a stressful experience (Liverman and Wilson, 1981). The Scanlon, et al., (1980) report the police did not force residents to evacuate who appeared "mentally competent" and wanted to remain in their homes. However, the evidence suggests that almost all people in the first stage of

the evacuation (about 3500) left when advised to do so by police. As the media picked up the story, many residents left before being warned by police (Scanlon, et al., 1980).

4.2.2.3 Warning experience

In the propane incident, evacuation was determined in part by the belief in the warning issued and the level of perceived risk (Perry and Mushkatel, 1984). Both belief in the warning and the perceived level of risk were influenced by the specificity of the warning received and the credibility of the warning source. Confirmation also played a role in shaping warning belief. Overall, the evacuation process was similar to that found in flood situations.

Love Canal presented an alternative scenario. Because of the ambiguity and uncertainty about the seriousness of the chemical migration, there was general distrust of both officials and experts. Beliefs concerning the magnitude of the chemical migration were highly correlated with age and the presence of dependent children (Fowlkes and Miller, 1982). Social structural factors and the desire for evidence influenced both the access and attentiveness to information and perceptions of the relevance of the information (Fowlkes and Miller, 1982).

4.2.2.4 Evacuation experience

The Disaster Research Center studies provide additional insight into evacuation processes (Quarantelli, 1984; 1982a; 1981a; 1981b). Most evacuations occurring in response to transport accidents are spontaneous with warnings usually spread by word of mouth. Response is quick; most people view the situation as dangerous and react promptly. Response is usually spontaneous and not based on formal evacuation plans. Mass media rarely plays a major role in evacuations. Problems are frequently encountered in these ad-hoc efforts. Warning messages are frequently incomplete and vague (Gray, 1981a). In addition, little guidance on reentry is given evacuees (Quarantelli, 1981a; 1984). Overall, most communities are not well prepared for evacuations following transportation accidents (Quarantelli, 1982a).

4.2.2.5 Planning issues

Both the private and public sectors respond to hazardous material emergencies. Often the specific chemicals involved cannot be immediately identified as was the case in the Mississauga incident. Frequently, special equipment and specialized training are needed for effective response to hazardous material emergencies. Thus, response often involves calling in specialist teams from the manufacturer of the substance or from one of the commercial response teams. Nearly every chemical manufacturing and processing firm has company personnel who are

on call at all times to respond to incidents involving their company's products (Cashman,1983).

Deciding who has command over the evacuation is frequently a problem. Lack of responsible command organizations creates delays in decisions to evacuate and problems in implementing decisions (Quarantelli, 1981b). This often occurs due to poor pre-emergency planning (Gray, 1981a). Small communities that do not have a designated official to handle hazardous material accidents have difficulty in deciding whether to evacuate (Fitzpatrick and Waxman, 1972). Uncertainties regarding jurisdictional authority, lack of outside assistance, poor communication between public agencies and private companies, and inadequate resources also constrain evacuation efforts (Quarantelli, 1984). Differing definitions of risk by local and state officials also lead to problems in evacuation decisions (Albert and Segaloff, 1962).

The cost of such evacuations may be extensive. During the extended evacuation in Mississauga, businesses lost an estimated $50 million. The average cost of evacuation to households was $200 plus $90 in lost wages (Burton, 1981).

Reentry and convergence are frequent problems during evacuations. Perimeter control of evacuated areas was found difficult to maintain, especially when the Mississauga evacuation was extended. Officials at Mississauga assigned special personnel to entry points and made arrangements for animal care workers to feed pets that were left in the evacuated areas (Scanlon et al., 1980). This presented problems later when residents were allowed back into the area only to find that their house keys were not available. An all-clear signal following an evacuation due to a ammonia gas releases led to traffic jams when people, who had evacuated in an orderly fashion, attempted to return to their residences (Albert and Segaloff, 1962).

Planning for permanent relocation of families, following the Love Canal toxic waste migration, had problems due to lack of credibility of authorities and lack of communication during the relocation process. Similar problems in relocation occurred at Times Beach, Missouri, following the discovery of Dioxin contamination.

The case study of the Taft, Louisiana, evacuation highlights several general findings (Quarantelli, 1983). The response to the emergency was governed by the adaptation of plans for other events rather than by pre-established plans. Local officials were not adequately informed which hindered evacuation decisions. Once decisions were made, 17,000 people were evacuated in darkness and rain in a period of two hours. No traffic congestion or accidents were reported.

4.2.3 Nuclear Crisis Situations

4.2.3.1 Behavioral issues

Behavioral studies regarding this category of evacuations are somewhat constrained by the lack of historical incidents. Several studies of conventional wartime evacuations and population movement or resettlements have been conducted (Bernard and Kile, 1952; Zelinsky, 1985). It is unclear, however, whether the differences between those social settings as well as the nature of the threats make generalizing suspect. FEMA and it predecessors have sponsored a variety of research to support evacuations under crisis conditions and has documented attempts to develop plans. This research has included behavioral studies of warning response and evacuation behavior (Perry, 1982; Perry et al., 1980; Rudolph, 1983); and organizational response (Sullivan et. al., 1978; Hoegh, 1977).

In addition, considerable survey research has been conducted in which the public's attitudes and perceptions about nuclear war have been measured (Nehnevajsa, 1979; 1983; Garrett, 1971). These surveys have provided data on public attitudes concerning the efficacy of relocation, desirability of crisis relocation planning (CRP) programs, willingness to relocate, likelihood of evacuation, compliance with others to evacuate, and the survivability of a relocation.

These attitudinal studies provide valuable information on the characteristics of people holding certain beliefs. They suffer, however, from the same problems that limit the utility of behavioral intentions studies for other hazards. The problem is that behaviors in an actual crisis may differ from intentions and may, in fact, conform to the prevailing situational factors that are strong influences on response. These surveys need to be grounded with other types of behavioral research to provide a more firm basis for developing planning assumptions.

A large number of critiques of crisis relocation planning programs have been published. These have ranged from general statements about the feasibility and desirability of this program to detailed reviews of specific aspects of planning. Baffin and Kilpatrick (1982) argue about the necessity of CRP as a strategic defense capability versus the advantages of a sheltering program. Herr (1984) advances a rather shallow argument that the public would not participate in a directed relocation. Hilburn and Parker (1983) suggest that the chief problems of CRP are due to inadequate planning for resources to support evacuees. Katz (1982) suggests that the economic effects of an evacuation as well as the social disruption are unacceptable.

Leaning and Keyes (1984a) have assembled a set of articles challenging the feasibility of CRP based on ethical, emotional, and technical arguments regarding the behavior of individuals and organizations in a crisis situation. Their chief argument is that CRP is unacceptable because it increases the probability of a nuclear war (Leaning and Keyes, 1984b). Unfortunately this argument, which is not substantiated with any careful analysis, detracts from some valid points raised in several of

the essays. This is also true of several other essays which are somewhat tautological, as well as based on rather imprecise logical arguments. For example, Schon (1984) refutes the external validity of three studies as being "articles of faith" being promoted by "survivalists," but he is unable to articulate why the problems "lie beyond analysis." Other essays explore the topics of governance (Lipsky, 1984), sheltering (Susskind, 1984), evacuation time estimates (Brand, 1984), the problems of children (Redlener, 1984) and medical problems (Geiger, 1984). These papers all raise some valid issues regarding problems of implementing a massive relocation, although at times these issues are obscured by rhetorical arguments.

4.2.3.2 Risk and risk perception

While there has been a considerable amount of negative response to crisis evacuation planning in the media, this sentiment is not fully supported by the results of attitudinal surveys of the general public (Garrett, 1971). Since 1963, when the public was first surveyed regarding the desirability of strategic evacuations of cities in a crisis situation, the majority of the population has favored this strategy. Support, however, has decreased from a high of 82% in 1963, to a low of 58% in 1972, but increased to 65% in 1978. Some geographical differences in support are found. Greater support comes from poorer rural areas than from more wealthy urban areas.

Similar levels of support are found for the development of crisis relocation plans (Nehnevajsa, 1983). Support for plans is more universally accepted around the country than the philosophical basis for the strategy. Despite the support on a general level, other forms of protective action are viewed by the public as more efficacious should an attack occur and have also received high levels of public support (Nehnevajsa, 1979). The main factor constraining beliefs that relocation would work is the lack of warning and implementation time (Nehnevajsa, 1983).

Mack and Baker (1961) studied three inadvertent soundings of civil defense air raid alarms to determine if people responded to these warnings of imminent attack. They found that few people interpreted the sirens as signalling an attack and that most did not understand the meaning of the sirens and took any action.

4.2.3.3 Behavioral intents

Considerable data have been collected on intended behavior in a crisis situation. These data suggest that if a crisis situation is perceived by the public as leading to a nuclear exchange, it is likely that a portion of the population would evacuate without an order to do so. This number is largely unknown and will depend on the nature and development of the situation. People who evacuate "spontaneously," however, will not necessarily place themselves at lower risk. A reasonable

estimate of the portion who would leave ranges between 20 and 50% of the population. Evacuation rates would likely be higher from less affluent portions of the country but would not likely be affected by proximity to high-risk locations (Nehnevajsa, 1983).

The number leaving would likely be significantly increased if the President or some other government agency urged or ordered the public to evacuate (Rogers, 1980). The greatest effect would likely come in areas with lower propensities for spontaneous evacuation. While some variations would exist in evacuation rates around the country, they would not likely be great (Nehnevajsa, 1983). The main reasons for not complying with an evacuation recommendation are ideological in nature (Garrett, 1971). Of those who indicate they would comply, about two-thirds said they would follow instructions of officials regarding the logistics of the evacuation (Nehnevajsa, 1983). Those people most likely to follow instructions are from less affluent areas that have a stable population.

4.2.3.4 Planning issues

Several studies have sought to apply findings derived from studies of natural disasters to war-related evacuation planning (Ickle and Kincaid, 1956, Perry et al., 1980; Perry, 1982). According to Perry (1982), crisis relation planning can be interpreted within the context of emergent norm theory of collective behavior. The objective of CRP is to move citizens out of an area before an attack begins. Thus, warning response behavior in the event of nuclear attack situations does not differ from that behavior elicited in natural disasters. Perry argues that every disaster agent has some unique characteristics with nuclear events having as much within category variation as between category variation. Thus, the focus should be on developing generic means of coping with hazards. There are four essential conditions that ensure a decision to relocate: (1) the individual must have an adaptive plan, (2) the individual must perceive that personal risk involved in not relocating is high, (3) the threat must be perceived as real, and (4) the individual must have either the family (household) assembled to evacuate or have all members accounted for and not in danger. Emergency managers must address two activities:

1. identifying appropriate adaptive behaviors and strategies for implementing protective action, and

2. educating the relevant population with regard to the particular plan. Incentives recommended include information on safe destinations and plausible safety routes given in advance or as part of warning message, development of warning-confirmation centers based on telephone contacts, establishment of family message centers, and development of some form of security measures for areas evacuated.

4.3 MULTI HAZARD EVACUATION RESEARCH

Several multiple-hazards studies have focused on the social characteristics of response to warnings as they relate to other human behavior. Aquirre (1983) analyzed the relationship of human evacuation to migration, suggesting that evacuation can be viewed in the broader context of geographical mobility. Focusing on the variables of distance, permanence, and voluntarism used to distinguish evacuation from migration, he finds the clear-cut distinctions unwarranted. Arguing that future work should ascertain how findings regarding migration contribute to understanding specific propositions of evacuations and vice versa, Aquirre notes it is possible to study evacuation and migration in three models: (1) as residential displacement, (2) in the context of subjective decision-making processes triggered by stresses, and (3) from the collective behavior standpoint. As mass movements, evacuations often represent a collective behavior response wherein the evacuee is forced "to synthesize the elements of an emergent and collective situation to give consistency, orientation, and meaning to his act" (Aquirre, 1983; p. 425). Thus evacuation shares with migration conceptual and substantive elements which are interdependent under of the overall umbrella of geographical mobility.

Fritz (1957), in comparing disasters in six American communities, found that individuals interpret disaster events differently, depending on the immediate spatial cues but within a normal frame of reference. Initial behavior in disasters is not necessarily maladaptive or irrational but uncoordinated. To coordinate behavior, Fritz suggests substituting a collective or common definition through communication channels to aid coordination of behavior. Fritz found "scapegoating" and resentment by victims unusual unless rehabilitation efforts were perceived as discriminating among victims. Persons with the most extreme losses often exhibit no resentment or aggression. Fritz notes that maximum social and psychological disruption occurs when families or primary groups are separated. Fritz also found that emergent leaders in a disaster are often those with previous similar experience (i.e., firemen, priests, utility personnel) or those persons with no ego involvement in the situation.

In the NORC Studies (Fritz and Mark, 1954), data from 70 major and minor disasters revealed that, although reactions varied considerably both individually as well as with event type, general "modes" of reaction could be distinguished according to activity level varying from agitated to depressive. Panic flight appeared to occur under restricted conditions and for only some people. Panic flight may occur when the individual believes the situation is personally threatening or when escape is possible at the moment but may become impossible in the immediate future. Fritz and Mark (1954) suggest that such behavior is not caused by the irrational or uncontrolled nature of individuals but by a lack of coordination among large numbers of persons who have very different personal conceptions of the situation. They found evidence that inadequate forewarning may actually cause losses that would not have occurred if there had been no warning at all. In addition, they

found evidence that emotional reactions appeared aggravated by experiences such as being separated from family members and having intimate contact with the dead or injured.

In another study concerning humans in disasters, Fritz and Williams (1957) analyzed 40 disaster studies and found that disaster warnings need to be clear and specific and transmitted through channels to the entire public. Lack of prior experience with the disaster agent and the delusion of personal invulnerability interfere with the individual's ability to adopt a new frame of reference, especially if no prior warnings are given. Besides noting the lack of panic in disaster situations, they found that controlling the convergence behavior of outsiders not of the victims themselves was the problem. Fritz and Williams also found increased social stability during an emergency which influenced both personal and social recuperation. Hostility and blame were not common to victims who essentially were "future-oriented"--searching for amelioration of future threat. They suggest that "issue-makers" may use mass media to foster "scapegoats" for their own purposes. In managing disasters, a lack of "fit" between perceptions of the needs of victims and organized relief operations was apparent.

Perry (1979a; 1979b) reviewed and summarized empirical studies of warning responses, focusing on voluntary pre-impact evacuation behavior. He notes that earlier studies lacked analytic models to identify variables and specify patterns. The later system's models had to be supplemented by some form of social psychological model to enhance the framework and to allow concurrent analysis of the individual and community levels. A model adapting the integrated systems approach with the emergent norm perspective permitted the "temporal ordering of factors" in personal reactions to warnings. Perry hypothesizes eight causal factors that contribute to the individual's decision to evacuate. As presented by Perry (1979a) the factors that can (a) increase the possibility of evacuation are

(1) a more precise the individual adaptive plan,

(2) a better individual perception of the real threat (warning belief),

(3) a higher level of perceived risk,

(4) the fact that family (household) members are together or accounted for,

(5) a closer relationship to extended kin,

(6) a greater participation in the community,

and factors that can (b) lessen the possibility of evacuation are

(1) families headed by aged persons, or extended-family households containing aged, and

(2) cultural factors such as race/ethnicity.

In another article, Perry (1979b) formulates a number of recommendations for building "incentives to evacuate" into warning systems, using normal behavioral tendencies observed in past warning responses. In yet another study, Perry, Greene, and Lindell (1980) provide a further articulation of these incentives. They argue that warnings are relatively useless without a community evacuation plan. They also contend that warning messages should be as specific as possible regarding the type of threat, the probable time of impact, and suggestions for appropriate actions. They found from a study of four flood-stricken communities that evacuees did not necessarily hear about the availability of shelter from the warning message. Although evacuees clearly prefer homes of relatives or friends as refuge, use of public shelters increases when community preparation is high, when entire communities are evacuated, or when a long duration of evacuation is anticipated. When flooding is a recurrent pattern and a disaster subculture exists, the use of public shelters tends to be low. The authors note that as forewarning time shortens and community preparation is low, people will first seek known protection which may not always be in their best interests. Programs are advocated for educating the public about emergency plans. The data also indicate that families tend to evacuate as units, and this concept of "symbolic security" regarding security measures is supported by the research. Furthermore, the data suggest that the public is receptive to the idea of officially provided transportation for evacuation as well as the concept of "family message centers," both of which could be used in planning to enhance evacuation response.

Panic, as a behavioral response, has been researched extensively. Quarantelli determined from data gathered by the Disaster Team of the National Opinion Research Center and other documented sources that the frequency of panic behavior had been overstated in the disaster literature (Quarantelli, 1954; 1957). He found that panic behavior occurred under specific conditions in which the participant engaged not in antisocial behavior but rather in a type of non-social action. "Such behavior arises upon a definition of entrapment, a perception of collective powerlessness, and a feeling of individual isolation in a crisis" (Quarantelli, 1954). He also notes "the most important condition for the occurrence and continuance of panic is the feeling on the part of the participant that he may be unable to escape from an impending event." The non-social behavior is short-lived but is a distinguishing feature from that of controlled withdrawal. In addition, Quarantelli noted that contributory panic conditions may include the preexistence of a group's definition of a crisis situation or sensitization of the individual who has experienced a prior crisis event.

Quarantelli (1960), in a theoretical synthesis of studies through 1960, noted that basic misconceptions of evacuation in disasters and mass emergencies existed. These myths included the notion that disaster-victims almost never panic; instead flight behavior is prudent and controlled, and the notion that passive-victims are rarely inactive; victims instead actively participate in extensive patterns of informal aid and self help. In addition, the total organizational breakdown of control over withdrawal behavior is seen both as impossible as well as dysfunctional (cited in Quarantelli, 1980).

The topic of convergence behavior in disasters has been discussed by Fritz and Mathewson (1957). They define three types of convergence: personal, informational, and material. A typology of convergence is developed by distinguishing five different groups according to motivations for converging: returnees, anxious, helpers, curious, and exploiters. Often convergers, including friends and relatives of victims sent to recover possessions, are mistaken for looters. Fritz and Mathewson's work indicates that convergers hinder official organizational efforts to evacuate during rescue and to conduct relief operations. This problem particularly hindered the evacuation of people after a tornado (Taylor et al., 1970; Wallace; 1956).

Strope, Devaney, and Nehnevajsa (1977) analyzed results from data related to existing emergency plans and pre-disaster public information activities that may have included prior tests and/or exercises involving either or both disaster organizations or the public. Data from 57 evacuations suggest that drills and tests differ substantially from real events; therefore, such exercises are neither economic nor representative of the population's ability to cope in an emergency. Although records of disasters are incomplete, some evidence exists that public drills may be counterproductive. Commonly, post-disaster audits made recommendations for improved plans, equipment procurements, and infrastructure changes, but they did not find support for conducting any more public drills or exercises. They also found that inducing public participation in drills is difficult and may even introduce misinformation and ambiguity when a subsequent emergency arises, limit response flexibility, and degrade information-source credibility. They further found that information efforts to educate the public prior to an event had a limited effect.

At the organizational level, Strope, Devaney, and Nehnevajsa (1977) found that evacuations have routinely been successful even when no specific plans were made in advance. When plans were utilized in an event, familiarity of officials with those plans appeared the most important factor. They suggest that efforts be made to enhance organizational infrastructure and effectiveness, including the advance preparation of warning messages and their means of dissemination. Public pre-disaster information should be limited to enhancing credibility of authority sources used during an emergency.

Researchers have also looked at the problem of role conflict, strain, or abandonment by emergency workers in times of emergencies. The notion is that emergency workers have two competing roles in an emergency: to perform their emergency duties and to attend to family or intimates who are at risk from the emergency. It follows from this concept that during an evacuation workers might decide to abandon their emergency roles and fail to carry out their duties. Mileti (1985) has recently examined the concept as first conceptualized by Killian (1952) and later discussed by Moore (1958), Fritz (1961), Bates et al. (1963), Dynes (1970), Barton (1969), and Quarantelli (no date). The prevailing line of thought on role conflict is that, while people likely will experience conflict between family and organizational responsibilities, roles are rarely abandoned, and performing multiple roles does not jeopardize emergency duties.

Mileti (1985) concludes that when emergency work roles are "certain"--perhaps through training or planning--emergency workers do not abandon work roles to attend to roles involving intimate relationships. When emergency work roles are not "certain," than role conflict can occur, and would-be workers could attend to personal or family duties before attending to emergency duties. Mileti concludes that role conflict can elicit psychological stress or at least concern about safety of intimates. However, if the worker has a clear image of the emergency work role (which can be achieved through planning or training) then in an emergency he/she can resolve role conflict and fulfill the emergency work role while improvising ways to check on the safety of intimates.

4.4 MODELS OF EVACUATION BEHAVIOR

Behavioral scientists have formulated two classes of models associated with evacuation behavior. The first type of model is descriptive or process-oriented. These models attempt to describe the process or steps that people go through in arriving at a decision to evacuate or to do something else. The models are based on a time sequence of events, questions, information flows, and decisions.

The second type of model seeks to explain why people evacuate. These models generally attempt to identify the multivariate "causes" or factors that explain why some people evacuate and why others do not. They are concerned with a broad set of factors including social context, attitudes, perception, constraints, and other social and psychological constructs.

4.4.1 Evacuation Decision Processes

Models have been developed to describe the individual or family decision process and the organizational decision process, including the linkages between the two. Often models have been couched in a broader decision context of alternative protective actions where evacuation is only one possible behavior. These models have emerged over a period of

time in which various iterations of a model were designed, field-tested and subsequently revised. Flow diagrams have been developed to help visualize the process described by the models. Four of these models, representing current thinking about decision processes, are reviewed here.

4.4.1.1 Emergency decision model

Perry and Mushkatel (1984) as well as other of Perry's publications describe an emergency decision-making model for natural disasters. The model is shown in Fig. 4-1. The evacuation process is initiated upon receiving a message regarding an environmental threat. A series of questions then follows. A negative response at any stage leads to inaction. At the next stage a person asks if the threat really exists. Influencing the internal answer to this question are the presence of environmental cues, confirmation, and perception of credibility of the warning source. If a threat does exist, the person then must assess whether or not the risk is personal. This assessment is influenced by the content of the message received and the person's previous experience. If the threat is real and personal, the person then asks if protection is possible. This is influenced by past experience and knowledge about the threat. The evaluation of protective action is followed by asking if the person can take that action. This is shaped by timing, family context, and having a plan of action. The next question is whether action will significantly reduce the threat or consequences. The evaluation of effectiveness is thought to be influenced by past experience and sociocultural beliefs.

Finally, the person evaluates a recommended action. If this action is in agreement with his or her own assessment of the situation, he/she will likely follow the recommendation. If not, other choices are reviewed while taking into account what friends, kin, and neighbors are doing and their own conventional wisdom. Persons-at-risk then proceed to take the action perceived to minimize the negative consequences.

4.4.1.2 Model of warning response

A slightly different model of warning response has been advanced by Mileti and Sorensen (in press). The model also suggests a staged set of processes over time but is less rigid in its structure (Fig. 4-2). The evacuation (or other protective action) process is initiated when the warning is heard. Hearing a warning is insufficient by itself, in many cases, for people to evacuate. The next stage is understanding the warning. Understanding involves the formation of mental images of the message content consistent with the threat situation. After understanding, people must come to believe that the warning is true and accurate. Next, people must interpret the message as being relevant to themselves--personalizing. Finally, they must decide to take action and overcome constraints to taking that course of action. Throughout the process a variety of factors influence hearing,

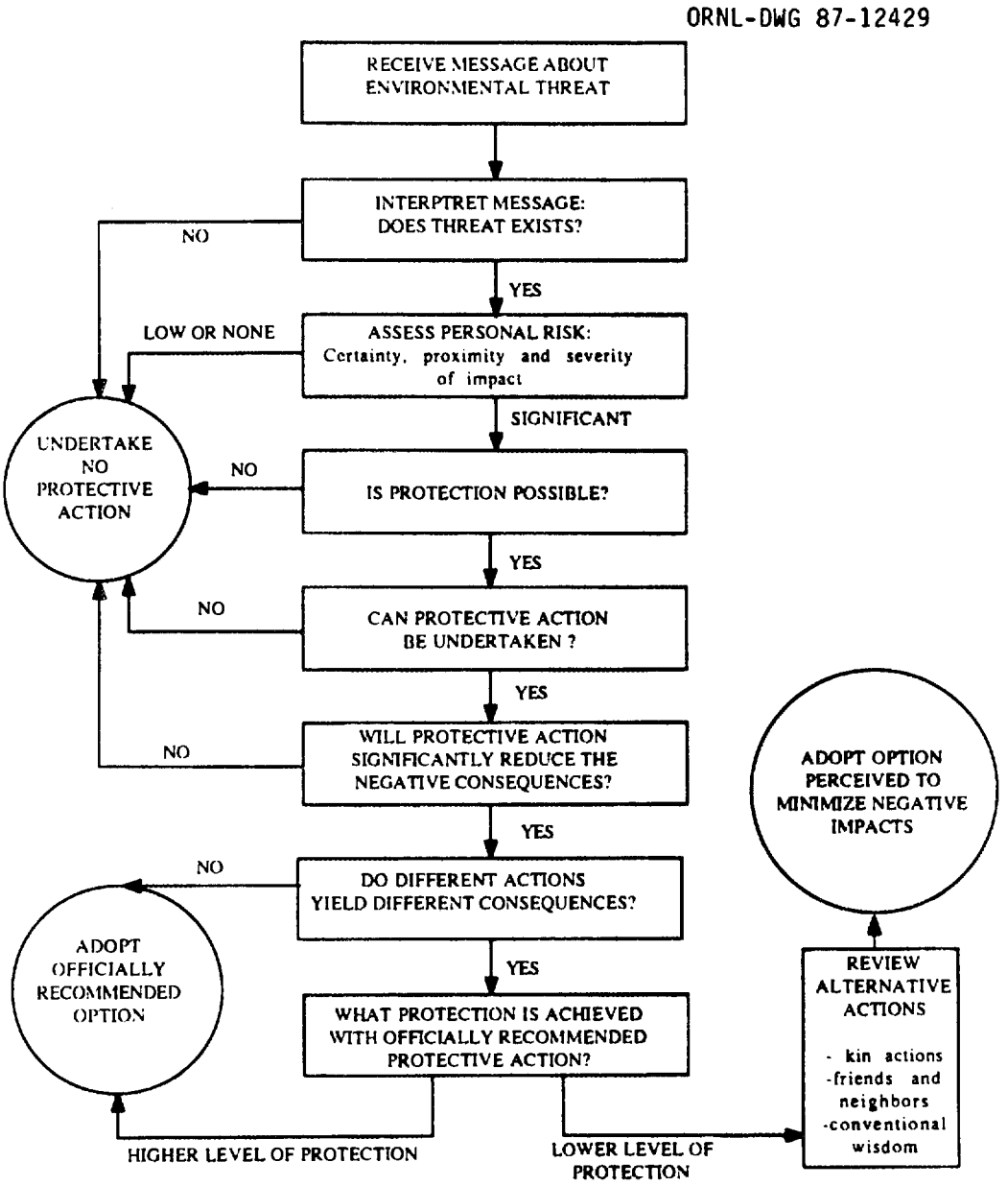

Fig. 4-1. Emergency decision-making model.
Source: Perry and Mushkatel, 1984

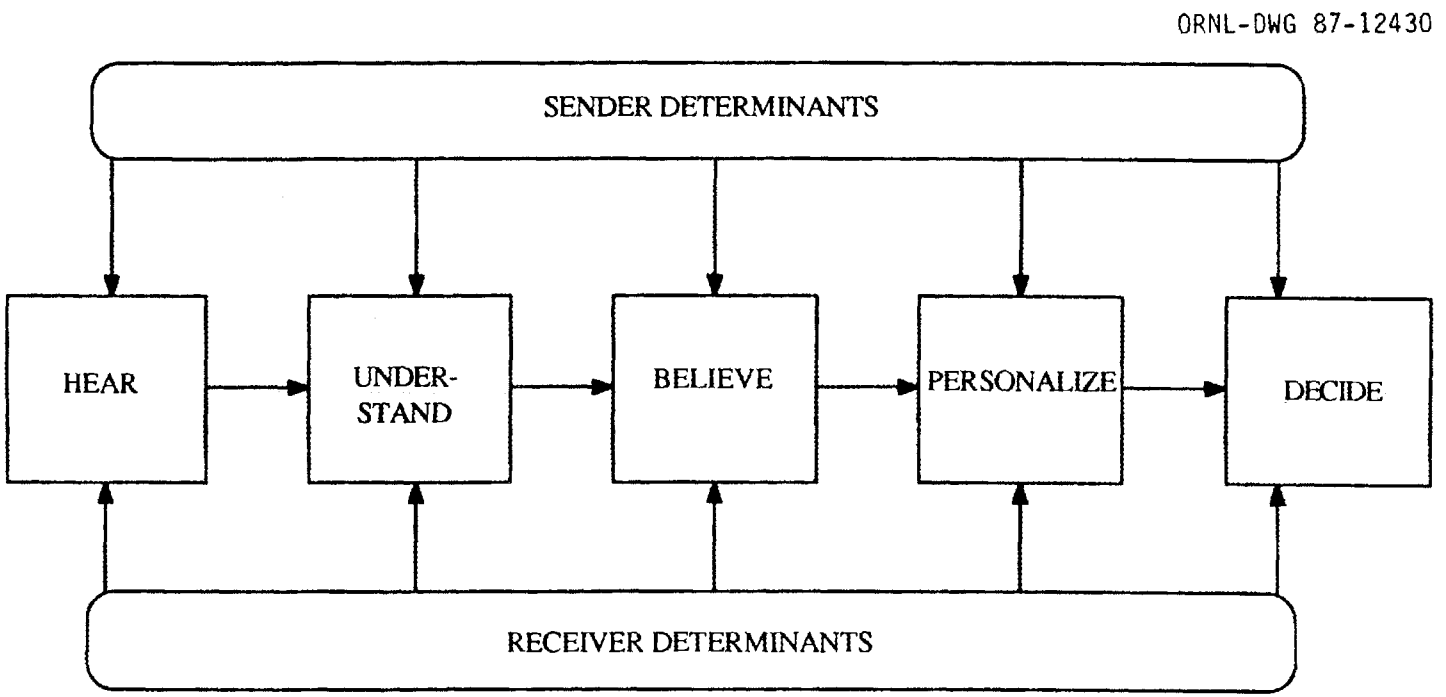

Fig. 4-2. Model of warning response. Source: Mileti and Sorensen (in press)

understanding, believing, personalizing, deciding, and behaving. These relate to the nature of the warning effort, the characteristics of the receiver, and the process of confirming the warning information.

4.4.1.3 Conflict theory of emergency decisions

Janis and Mann (1977) present a theoretical model of emergency warning response. They introduce the concept of adaptive behavior which is defined as making effective protective decisions under a vigilant coping pattern. Four conditions characterize effective coping. First, an awareness of serious risk if protective action is not taken. Second, an awareness of serious risk if any of the immediately perceived protective actions are taken. Third, the hope that a search for more information will lead to a better solution. Fourth, the belief that there is time to search and make a better decision.

The model results in five patterns of behavior. Not perceiving a threat leads to "unconflicted inertia" or the continuation of normal activities. Satisfaction that an intended behavior will reduce the risk is labeled "unconflicted change." The absence of hope to find a better means of coping leads to a condition they call "defense avoidance" where people become inattentive, assign blame to others, or ignore the situation. Perceiving that there is not time to find a solution leads to "hypervigilance" where people may imitate the behavior of others or, at the extreme, panic. Meeting all four conditions is called "vigilance" and leads to a new course of protective response.

4.4.1.4 Model of an evacuation decision system

A model of organizational decision processes in evacuation has been developed by Sorensen and Mileti (in press; Mileti et al., 1985). This model defines the general component, common decision points, and linkages that are somewhat characteristic of all evacuation decisions. The key decision points and communication linkages which define the process are illustrated in Fig. 4-3. The model has three basic components: a detection subsystem, an emergency management subsystem, and a public response subsystem. The initial stage in the decision-making process is the detection of hazard or the recognition that the environment poses a hazard. Once the hazard is detected, the second key decision is whether or not the hazard poses a threat. Once the threat is judged to be significant, the detector/assessor must decide whether or not to alert the public or officials of the risk and potential damages and then, who should be notified of the threat. A notification of a public official typically results in the activation of an emergency response structure. The organization initially notified must decide who else to involve in a decision to evacuate. Once mobilized, a decision must be made by emergency managers as to whether the risks warrant warning or protective action. Finally, a decision is made as to what type of protective action is needed and whether or how to warn the public.

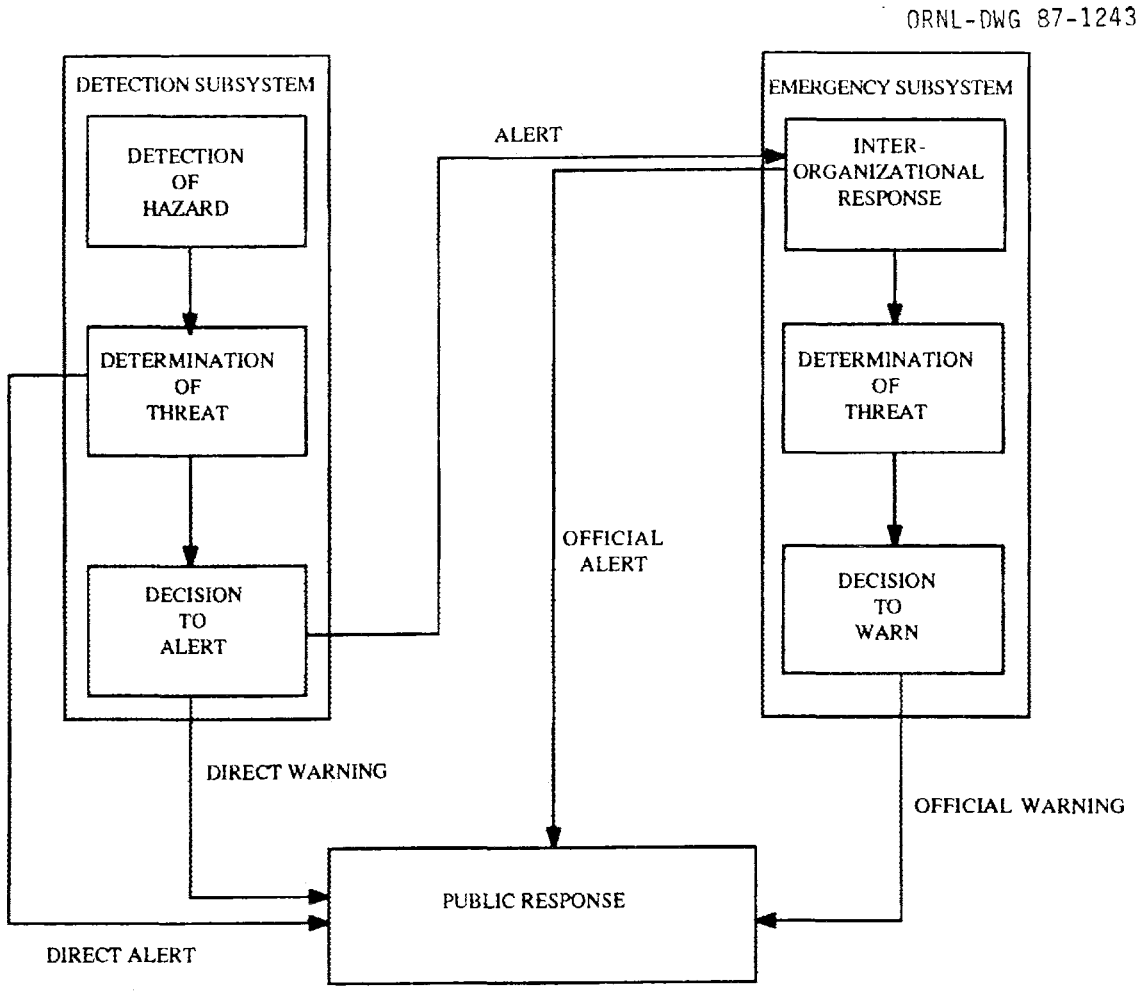

Fig. 4-3. Model of an evacuation decision system. Source: Sorensen and Mileti (in press)

This model illustrates that the organizational component of an evacuation can range from a simple situation involving a citizen-generated detection and alert mechanism to a complex situation involving a large scientific monitoring program accompanied by a bureaucratic government decision structure. The process is often interactive with numerous dynamic communication flows regardless of the scale and complexity.

4.4.2 Explanatory Models

Several conceptual models of warnings response have been developed to explain variations in the outcome of the emergency decision process at the individual level. Model development has involved theory building by empirically testing hypotheses using multivariate analyses of behavioral surveys. These models have evolved over time through replication and revision of a series of hypotheses or through application of more general behavioral theories derived from the study of other phenomena.

No attempt has been made to develop such a model at the organizational level because of the lack of comparable data from a sufficiently large number of emergencies and because of difficulties in specifying the appropriate variables to analyze (Sorensen et al., 1985). The basis for understanding why some organizations implement an effective evacuation decision process versus a poor one is not well understood.

4.4.2.1 Protective action decision model

Houts et al. (1984) develop a model of evacuation primarily based on the health belief model. This latter model is derived from the study of why people protect themselves against a wide range of health hazards. This model suggests that individuals assess the hazard based on the two characteristics of perceived severity and perceived susceptibility. A person also assesses possible responses in terms of perceived efficacy and the barriers and costs associated with recommended actions. Accordingly, evacuation occurs due to a perception of high severity of the threat accompanied by a perception of high self-vulnerability. Evacuation occurs under these conditions unless barriers prevent it from occurring.

4.4.2.2 Causal model of evacuation decisions

The factors that Perry and Mushkatel (1984) postulate to be important in evacuation decisions and the configuration of those variables are depicted in Fig. 4-4. Four factors are postulated to directly explain the decision to evacuate. These include having a precise adaptive plan, having a high level of perceived personal risk, having a high level of belief in the warning, and having the family together or accounted for when the decision is made. A number of antecedent factors influence variability in these four factors. Having an adaptive

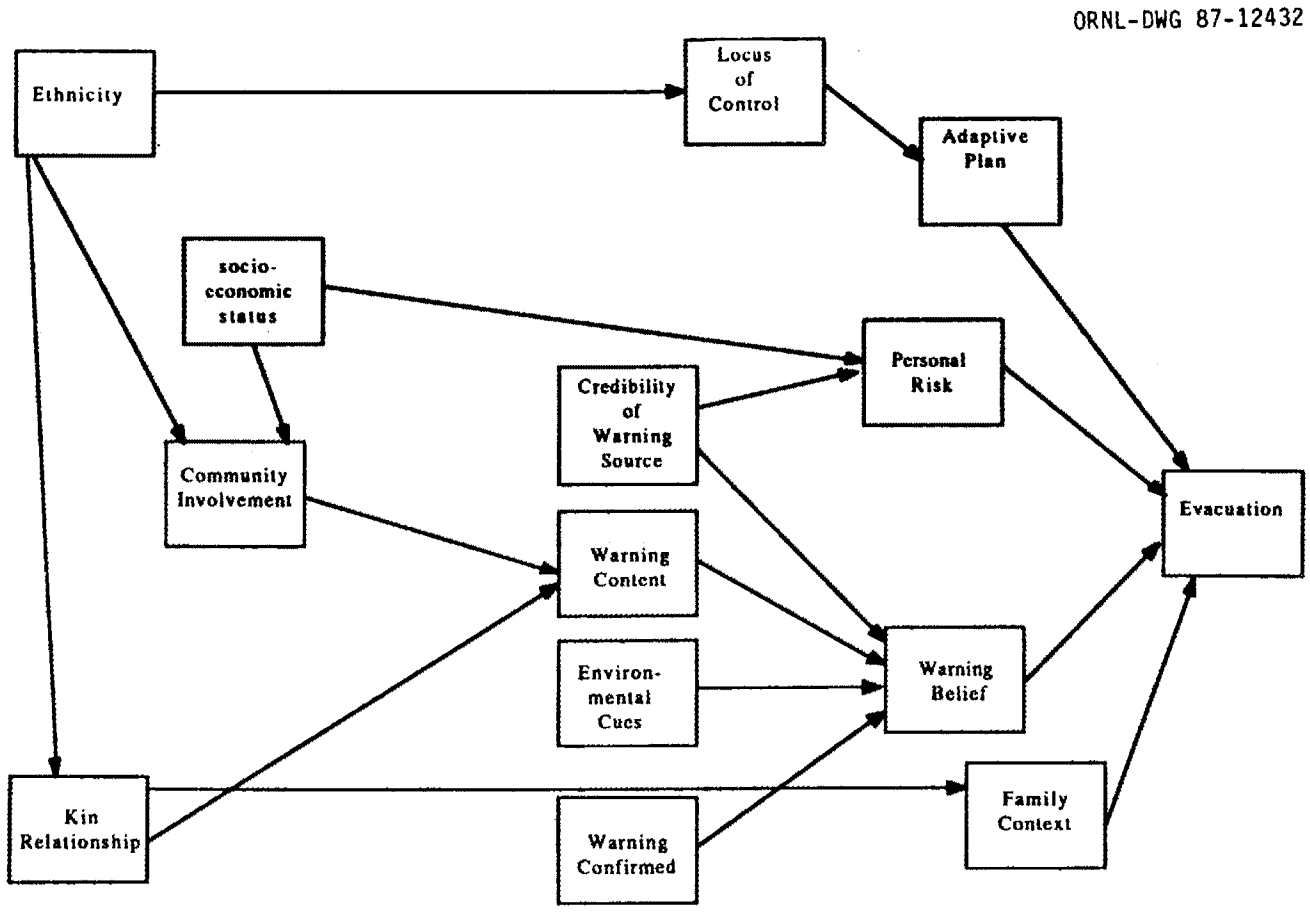

Fig. 4-4. Causal model of evacuation decisions. Source: Perry and Mushkatel, 1984

plan is more likely with an internal locus of control which in turn is influenced by ethnicity. Level of perceived risk is shaped by ethnicity, socioeconomic status, credibility of warning source, and warning content. Warning belief is influenced by warning content credibility and confirmation as well as by environmental cues. Family context is influenced by pre-emergency patterns of kin relations.

Perry and Mushkatel (1984) empirically tested this model for evacuations due to a flood and a hazardous material accident in a rail yard. The results substantiate the model structure for both incidents. A similar model has been used to explain evacuation behavior at Mount St. Helens (Perry and Greene, 1983) and in four flash floods (Perry et al., 1981).

4.4.2.3 General model of evacuation behavior

A general model of evacuation behavior has been developed by Sorensen and Richardson (1984) to attempt to explain evacuation behavior at TMI in light of evacuation processes observed for natural disasters. This model is presented in Fig. 4-5. The model, as others, suggests that perceived threat at the time of the emergency is a major cause of evacuation. Perceived threat and behavior are shaped by information about the emergency coming from the emergency warning system and other sources such as friends or relatives. This basic process of risk perception formation is thought to be influenced by two sets of antecedent factors. As the emergency unfolds, a person's concern with other worries and threats, their perceived ability and resources to cope with the emergency, and their trust in the ability of risk managers are thought to influence how warnings are interpreted, perception of threat, and subsequent behavior. At a more basic level, three pre-emergency factors defined as demographic characteristics (e.g., age, socioeconomic status, family life stage), social ties, and sensitivity to the category or type of threat are important in shaping the emergency response. This process is mediated by hazard-specific, situational factors as well as by situational constraints.

4.4.3 Future Directions

As the empirical base of data on evacuation behavior improves, it is likely that our understanding of why people evacuate will be refined. It is difficult to imagine that existing models of behavior will change dramatically fashion as new evidence is accumulated. Existing models have explained roughly 25 to 50% of the variance in response in any given evacuation. Improvements will likely be made through further refinements of existing model constructs and, more importantly, with better measurement.

Variations in evacuation behavior between different events and between events involving different hazards is much less well understood. The general constructs that explain variation within a single event are, based on limited observation, more likely to be similar

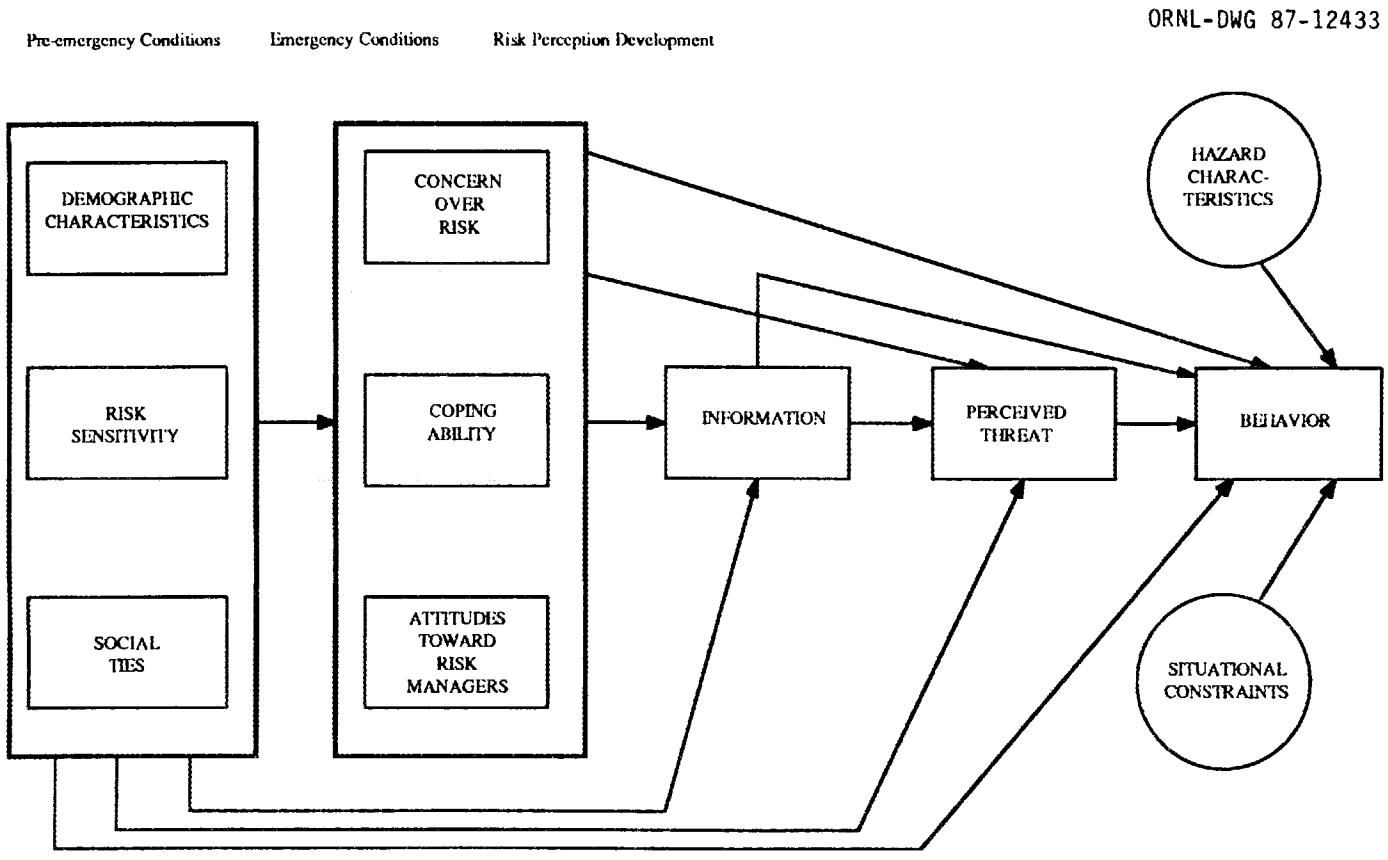

Fig. 4-5. A general model of evacuation behavior.

across events, than radically different. Thus the model that explains flood evacuation decisions will likely also explain hazardous materials or nuclear power plant accident evacuations. Still lacking is a precise explanation of how hazard characteristics and variation in the warning and response experience relates to different evacuation profiles defined by macro variables such as the level and timing of response.

4.5 SUMMARY OF EVACUATION BEHAVIOR IN DISASTER

To conclude this chapter, we have attempted to aggregate data derived from various behavioral studies of evacuation so that we may address four questions frequently raised by emergency managers. First, what types of warning are needed for people to evacuate? Second, how many people evacuate in an emergency? Third, when do people evacuate? Fourth, do people evacuate unnecessarily?

Answers to these questions are based on the aggregation of data from the studies discussed in this chapter. We should caution that the patterns are somewhat tentative because data for the various studies have been collected in different ways, for different purposes, and with different sampling frames and levels of reliability. In addition, the events are very different. Nevertheless, some interesting patterns emerge when available worthwhile data are aggregated. The aggregated data to support these conclusions are summarized in Appendix C.

4.5.1 Evacuation and Warning

Formal warnings greatly facilitate evacuations but are not an absolute prerequisite for evacuations to occur. In the series of events examined in this chapter, the percent of the population warned ranged from 30% to nearly 100% of the population defined by the researcher to be at risk and included in the sample. The poorest warning effort documented by a behavioral study was at the Big Thompson, Colorado, flood, where an estimated 30% received a warning before the waters hit. It is possible that in other disasters, where behavioral surveys have not been done, lower warning rates would be found. In most events, particularly with a lead time of 3 to 4 hours, at least 90 to 100% of the population can be warned without the use of a highly specialized warning system.

People were warned in most events by a mix of three message sources: emergency officials, such as police officers or emergency workers; informal sources, such as friends, neighbors, or relatives; and the mass electronic media, such as radio or television. The mix varies among events, although the reasons for variations in the mix are not well understood.

4.5.2 Evacuation Rates

Evacuation rates are determined by the percentage of the sample-at-risk that evacuated. These rates may be misleading, depending on assumptions about how the sample was defined and whether or not it was representative of the true population at risk. Insufficient information exists to make judgments about such problems. Taking the researchers data at face value, we find evacuation rates ranged from 0 to 98% of the populations at risk. This suggests that the statistic of evacuation rate is relatively meaningless in many evacuation settings. Obviously, this rate is not a good measure of evacuation success. A better measure may well be the injury and fatality rates among the non-evacuees.

In comparing warning rates with evacuation rates, an interesting pattern emerges. In only one of the cases observed, a greater percentage of people evacuate than were warned. In the remaining cases, more were warned than left. This suggests that, in order to achieve a high rate of evacuation when it is prudent due to the risks involved, a high level of warning is needed. This underscores the importance of warning systems to support evacuation planning.

4.5.3 Evacuation Timing

Available data show that evacuation mobilization times or departure times follow a logistic distribution. The shape of the curve and its steepness seem to depend on the urgency of the situation and the time available to leave before the threat is present. In situations like Mississauga, close to 90% of the first group of evacuees left within 60 minutes with nearly 60% departing in 10 minutes or less. In more protracted situations, the same s-curve pattern occurs but is spread out over a longer time frame. People appear to adjust the rapidity of their evacuation behavior in accordance with the severity and timing of the impending threat.

4.5.4 Evacuation and Risk

Fairly limited data suggest that indeed not all people who are defined to be at risk need to evacuate to prevent personal harm. Evacuation rates decrease as level of risk decreases, although not always in a direct linear fashion. In high risk areas, warning systems can achieve a high rate of evacuation. In low risk areas, evacuation rates are significantly lower. Often this is because people at lower risk take some other form of protective action such as sheltering, even though an evacuation is ordered. This suggests that the public may be fairly good appraisers of the microconditions of risk in their environments, but, unfortunately, they are not always correct. Until planning for evacuations can consider risk information at a much more detailed level, this process of citizen risk estimation will likely continue.

5. RESEARCH TO SUPPORT EVACUATION PLANNING

5.1 INTRODUCTION

In this chapter research directly oriented towards evacuation plan development and research findings with direct applicability towards evacuation planning are reviewed and summarized. Work in this area, in general, falls into two broad categories. The first concerns hazard-specific planning studies which can address multiple or a single functional response area. For example, a report may present information and results on an investigation of a traffic time estimate model for nuclear power plants. Another may concern general planning issues for hurricanes. Still another may address issues of traffic control in the face of a crisis evacuation. The second broad category includes studies which investigate a single functional planning topic that cuts across hazards, although may focus on a single or a few specific hazards. For example, a study might focus on warning systems for all climatological events or sheltering issues for all relevant hazards.

Some of the research and to a larger degree practical planning experiences has been summarized into a number of evacuation planning guides. Some of these have been issued by FEMA; others have been developed by states or regions. In many instances, evacuation is addressed as a topic under a broader umbrella of emergency planning activities.

In this section, we have segmented evacuation planning into a number of functional task areas, some are overlapping and some are applicable to broader emergency planning issues. These functional areas are

1. command/control,
2. traffic control,
3. warnings to support evacuation,
4. evacuation strategy,
5. evacuation modeling,
6. special populations,
7. sheltering to support evacuation,
8. evacuation cost, and
9. relocations as evacuations.

5.2 COMMAND/CONTROL

Command/control refers to the management structure used to make evacuation decisions and to control or implement those decisions from an administrative perspective. It also includes planning to manage an evacuation when one occurs.

5.2.1 Management Structure

Management of evacuations and the processes involved in implementing evacuations have been extensively documented. Accounts exist for flood or dam-failure evacuations (Anderson, 1964; Clifford, 1956; Erickson, 1976; Graham and Brown, 1983; Worth and McLuckie, 1977), hurricanes (Chiu et al., 1983; Committee on Science and Technology, 1984; Forrest, 1979; Moore et al., 1963; Savage et al., 1984); tsunami (Anderson, 1970; 1966; 1965; Yutzy, 1964), volcano (Hodge et al., 1979; Sorensen, 1981; Sorensen and Gersmehl, 1980), hazardous materials accidents (Burton, 1981; Gray, 1981a; 1981b; Quarantelli, 1983, 1981b), and nuclear power plant accidents (Chenault et al., 1979; Dynes et al., 1979; Fisher, 1981). Many findings from these studies were reviewed in the previous chapter under the context of organizational behavior in evacuations.

The lack of a centralized command structure may create confusion and delay the issuance of an evacuation notification (Quarantelli, 1986). In addition, a clear hierarchy of authority generally enhances evacuation management. The lack of a management structure may lead to competition for power and authority and, hence, management problems (Sorensen, 1981). In other situations, the lack of a management structure leads to a management void in which no one is willing to assume authority and responsibility (Quarantelli, 1986).

The Emergency Operations Center (EOC) concept is used in most evacuation planning to provide a physical as well as a command structure for evacuation management. The lack of a centralized EOC has been a constraint to effective emergency management in previous events (Saarinen et al., 1984). In the 1986 Cheyenne flood, the loss of the EOC during the emergency led to a breakdown in management when officials turned their efforts to restoring the EOC and neglected the emergency (Sorensen, 1986a). The size of the EOC and equipment in an EOC often influences the effectiveness of the emergency management effort (Dynes et al., 1979). Lack of resources at an EOC (e.g., food and water) can cause problems in maintaining operations (Pinellas County, 1986).

There appears to be a fine line between involving all possible parties and limiting access to the command structure in an EOC. The Pinellas County (1986) evaluation following Hurricane Elena noted that a large number of people in the EOC hampered notification and decision making. On the other hand, not having the key personnel from important agencies led to problems in managing shelter operations. An off-limits or restricted access EOC has been identified as one means of reducing confusion and conflict among managers (Sorensen and Gersmehl, 1980). When a large number of people with minor levels of authority gather in an EOC, those in charge may use information dissemination to maintain control (Sorensen, 1981).

The role of planning to support an effective management structure is not subject to wide debate. The lack of planning, in general, has been cited as a cause of poor evacuation management in many events (Quarantelli, 1980; Brinson, 1980; Chiu et al., 1983; Gray, 1981b;

Scanlon et al., 1980). Stated as a positive relationship, planning enhances management. In a comparative study of two communities, Anderson (1970) found that prior planning led to better command and control of a tsunami-induced evacuation. Others have noted that the lack of specific elements of evacuation planning have led to management problems. For example the lack of specific and predetermined evacuation routes has led to poor evacuation management (Brinson, 1980; Chiu et al., 1983). Others argue that such a detailed level of planning to support management is only needed for complex evacuations (Chenault et al., 1979) and for concurrent hazards (Moore et al., 1964; Sorensen, 1986a).

The media is often a major constraint to effective command and control. Media attempts to gain information frequently interfere with management functions because they divert officials from their official duties (Wenger, 1985a; 1986). Press conferences are planned to control interference from media in managing an evacuation, but this strategy frequently fails. Inaccurate or premature media reports often create problems and extra work for officials and can undermine the management efforts when faulty or inaccurate information is disseminated (Pinellas County, 1986).

Evacuation management structures that serve well in the short-term situations may break down over time periods. The shift of personnel in management from the initial group in charge to the relief group can be problematic (Quarantelli, 1986). Evacuations that must be sustained over a long time frame can lead to the breakdown of command. People begin to question management practices, particularly under ambiguous threat situations (Hodge et al., 1979). Attempts are made to circumvent authority (Sorensen, 1981) or reenter evacuated areas against official orders (Burton,1981). From a similar viewpoint, the management of reentry often gets neglected or overlooked in evacuation planning (Moore et al., 1964).

Management structure has also been researched from a normative viewpoint for both evacuation planning and for emergency management in general. It appears that greatest attention has been given to hazards that are rare or have not been experienced. For example, considerable attention has been given to management structures to support crisis relocation planning. Two lines of thinking have emerged from this research. The first concerns the concept of "organizational relocation" (Chenault and Davis, 1978; Chenault and Gay, 1974; Butler and Rose, 1982; Miller et al., 1980). The purpose of this concept is to prevent the disaggregation of management structure of organizations during an evacuation to preserve authority and coordination. This is done by moving entire management systems into host areas to help govern the evacuees. The idea is based on well-established principles of organizational behavior. The research on the concept has logically developed from concept and rationale to guides and tests of implementability.

The second concerns the concept of "middle level management." This is based on the assumption that existing management structures will not support a large-scale evacuation and that a new level of governmental management not currently found in the country is needed (Harker and Wilmore, 1982; 1979; Wilmore and Harker, 1981a; 1981b). This concept suggests forming over 100 new planning zones that would be intermediate links between state and municipal governments. The assumptions on which this new concept of governance are based were never supported by either theoretical or empirical observations. In fact, the immense literature on organizations in disasters suggests that when a void in management does exist, groups will emerge to fill this void. Thus, building on unfounded and, perhaps, erroneous assumptions, an elaborate management scheme is developed with supporting planning guidance and examples.

Other normative work on management structure has been conducted for response systems. The National Academy of Public Administration (1980) evaluated alternative organizational structures to manage nuclear power plant emergencies. A number of planning guides for various hazards also contain numerous suggestions for a management structure.

5.2.2 Coordination and Maintenance of Evacuation Support

One of the most problematic aspects of any part of emergency response is the coordination of activities of various emergency personnel. Coordination is sometimes confused with control. Coordination can be created but not imposed by a central authority (Quarantelli, 1986). By nature, coordination is activity accomplished through cooperation, not by mandate. Furthermore, it is also confused with communications. Although communications is an important part of coordination, the ability to exchange information does not guarantee a coordinated response. General principles that both facilitate and undermine coordination are fairly well-defined and understood (Mileti et al. 1985; Sorensen et al., 1984). Simply stated, coordination seems to be maximized when organizations know what they and other organizations are supposed to do in an emergency, know who is to do it, have designated and understood communication ties to others in the network, and maintain flexibility.

The inability to coordinate the management of an evacuation has been documented as a cause of poor evacuation response (Forrest, 1979; Chiu et al., 1983). The lack of communications among officials may delay an evacuation and create confusion (Quarantelli, 1983). Coordination is usually more problematic in unanticipated and rare events (Hart et al., 1985; Sorensen, 1986a).

Coordination becomes more difficult when multiple jurisdictions are involved in an evacuation. Cutter (1984) notes that interstate coordination is more difficult to achieve than intercity coordination. In Hurricane Elena it was noted that contiguous counties failed to coordinate reentry into the evacuated area (Pinellas County, 1986). Evacuation orders in that same event were not coordinated between state and local agencies, leading to confusion over which areas should evacuate

(Baker, 1986). A Governor's order' prevented a local government's critical workers from getting through roadblocks to perform their emergency duties (Pinellas County, 1986). Other examples of similar coordination problems are found in the literature.

The structure of interagency information flows during emergencies has been extensively documented in a study of search and rescue operations (Drabek et al., 1981). Often this involves the participation of emergent groups. These groups, however, are often outside the communication network of normal emergency organizations, and coordination is difficult to achieve (Quarantelli, 1986). In addition, information often enters an organization at a point where proper dissemination to all relevant officials is not accomplished. Information flows often have a factual and a perceptual structure (e.g., credibility of the information source). A variety of factors color the way organizations use and process information in an evacuation situation. For example, the lack of visual cues of an impending hazard makes it difficult to initiate communication and decision processes that would lead to an evacuation (Scanlon et al., 1976).

Implementation guidelines for establishing emergency coordination have been defined in fairly mechanistic and physical terms. For example, good information exists on how to establish the hardware of a communications system and maintain that system. It is also well documented that redundant communication systems are often needed. This type of knowledge forms the basis for developing coordination plans. Less is known, however, about efficient management and use of a communication system or promoting good interpersonal relationships in an emergency. This type of information, also important to coordination, is not often reflected in planning.

Many studies have extensively documented communication problems in evacuations (Quarantelli, 1980; Mileti et al., 1985). In contrast, few if any attempts have been made to incorporate this knowledge into practical guidance that could minimize coordination problems, except in the context of general planning guides.

Maintenance of emergency services in an evacuation has been raised as an issue for several hazard situations. One of the more persistent issues concerns role strain, conflict, and abandonment among emergency workers. Although this issue cannot be excluded as a potential problem in every evacuation situation, research suggests that it has not been a problem in previous evacuations (Quarantelli, no date; Mileti, 1985). Furthermore, ways in which role conflict can be minimized are known. For example, one nuclear power plant has designed a tracking and message exchange center which allows emergency workers to communicate with families.

5.2.3 Decision Making

To date no study has systematically examined evacuation decision-making across a range of events. Despite this gap, a fair amount of research has documented decision issues in various historical evacuations. In addition, research on hypothetical decisions has been conducted for nuclear power plant accidents (Jaske, 1984; Aldrich et al, 1982; 1978; 1979), hurricanes (Baker, 1984b), earthquakes (Mileti, et al., 1981) and nuclear crises (Brown, 1975). A recent report attempts to synthesize the process of evacuation decision making and characterize the uncertainties encountered in previous evacuations (Mileti et al., 1985). This study induces four general categories and nineteen specific uncertainties that constrain evacuation decisions of public officials within emergency organizations. These categories are

1. Problems of interpretation including difficulties in recognizing a hazardous event, recognizing the consequences of likelihood of an event, or defining the magnitude of the event and failure to define an evacuation role, recognize relevant information, or define appropriate authority.

2. Problems of communication including not knowing whom to notify, not having the ability to describe the hazard, not having the ability to physically communicate, and receiving conflicting information.

3. Problems of misperceived impacts of a decision including panic, looting or other adverse consequences, loss of job, or other negative personal impacts, such as monetary costs of evacuating and liability.

4. Problems of exogenous influences including time availability, evacuation feasibility, prior experiences, planning, and outside pressures or expectations.

The study concludes that, while we can conceptualize the general decision processes in an impending disaster, our knowledge of the factors that influence decisions in any given situation are not well understood.

Despite the lack of empirical findings concerning decision making, a variety of prescriptive decision tools or aids have been developed to automate or assist evacuation decision making (Carroll, 1985; 1983). One type of aid that is being developed is a computerized information system. FEMA has developed the Integrated Emergency Management Information System (IEMIS) for nuclear power plant application (Jaske, 1984; 1986). This system provides the user with information on population, road networks, and environmental features. In addition, through the use of an atmospheric dispersion model, a hazard impact model, a traffic flow model, and a siren sound propagation model, the planner can simulate or model a real emergency. The information outputs can be used to predict needed evacuation zones and locations of potential traffic problems. The system requires considerable input data and computer capacity. A similar system for a microcomputer has also been developed which incorporates

heuristic decision aids (Belardo et al., 1983; Seagle et al., 1985). The Sullivans (1985) describe a concept for a simulation model to test evacuation planning effectiveness.

Several decision models have been developed to assist local decision-makers in issuing evacuation recommendations when a hurricane is approaching (Simpson et al., 1985; Ruch, 1985; Berke and Ruch, 1985; Berke et al., 1985). These systems are designed to provide a recommended action to the user. The Simpson et al. approach is geared to using probabilistic estimates of landfall and confidence intervals to arrive at a decision. The Ruch (1985) model, "ESTED," allows the selection of worst-case assumption regarding possible inundation and storm-timing to arrive at a decision about when to recommend action based on expected storm arrival. Berke and Ruch (1985) provide a computer simulation model oriented to more general mitigation planning including evacuation. These systems, however, are largely untested in real applications. The extent to which local decision makers would use this latter type of decision aid is not at all clear. In Hurricane Elena, Baker (1986) found that few local emergency officials used computerized decision tools even though they were available. The diffusion of computer equipment into local government agencies may eventually offset this response if applications for emergency management are adopted.

5.3 TRAFFIC CONTROL

In the context of evacuation planning, the topic of traffic control has received little special research attention. This is likely attributed to the fact that the principles and logistics of traffic control are well established for non-emergency operations of law enforcement agencies. Furthermore, traffic control has not created problems or been a noticeable issue in historical evacuations (Quarantelli, 1980). In most instances, people are moved without traffic accidents or congestion. Quarantelli (1983) noted in a study of the Taft, Louisiana, evacuation that there was no traffic congestion during the rapid evacuation of 17,000 people in spite of darkness and rain. Nevertheless, traffic control has been raised as an issue for crisis evacuations and nuclear power plant emergencies.

Traffic accident rates in 54 evacuations were studied by Hans and Sell (1974). They concluded that populations can be evacuated with minimum deaths and injuries. In that study, accident rates were calculated to be lower during evacuations than during normal times. Bastien et al. (1985) added data to Hans and Sell's data and calculated the probability of death and injury ($2^{-3} \times 10^{-9}$ for deaths; $3^{-4} \times 10^{-8}$ for injuries). These rates, however, are suspect because of problems with the original data. In two recent evacuations involving the movement of large populations (TMI, 1979 with 170,000 people; Mississauga, 1979 with 225,000 people), no traffic deaths were recorded, and no significant injuries due to accidents were reported. In a study of evacuations from chemical accidents over a five-year period, no traffic injuries or

fatalities were reported to be associated with any of 59 evacuations (Sorensen, 1986b).

This is not to imply that traffic-control problems never occur. Anecdotal evidence that traffic does get congested has been reported in media accounts, although it is more usual after an event than during evacuation. At Mount St. Helens, it was noted that the convergence of sightseers led to traffic congestion (Foxworthy and Hill, 1982). Furthermore, official roadblocks used to prevent entry into evacuated areas were a problem to the staff and were often avoided by those moving into the closed zones (Sorensen, 1981; Foxworthy and Hill, 1982). In general, reentry guidelines have been found to be inadequate for controlling the movement of people back into an evacuated area (Burton, 1981; Moore et al., 1964; Quarantelli, 1980)

Research on transportation systems planning, other than evacuation time modeling, has been mainly conducted to support crisis relocation planning. This work may be useful for evacuation planning for other hazards. Systan, Incorporated, has conducted extensive work on the logistics of traffic control in evacuations (Billheimer et al., 1976). This work concludes that an average large-scale evacuation will not be limited by fuel supply or vehicle availability. Inefficient allocation of fuel and vehicle, however, will likely cause localized problems. This work also suggests that the major problem in a large-scale evacuation is sharply peaked travel departures which may cause bottlenecks and traffic jams. Ways to even the flow have been explored but remain untested. A comprehensive report has been prepared for FEMA which details traffic control problems, control options for dealing with problems, and implementation guidance (Billheimer and McNally, 1983).

Much of this research is summarized in a recent FEMA planning guide--"Transportation Planning Guidelines for Evacuation of Large Populations" (USFEMA, 1984d). This guide will be of use to emergency planners in large urban areas who must plan for disasters other than a nuclear crisis. For the most part, the guide is reflective of the general aspects of evacuation planning for hurricanes and nuclear power plant accidents. One major difference, however, is that the guide assumes that people can be assigned to a certain destination or host area. Research to date suggests this is not a sound planning principle and potentially misleading. Other aspects of the guide remain somewhat speculative. For example, the viability of scheduling departures, freeway reversal, and entry permits remain largely untested and lack critical evaluation.

5.4 WARNING SYSTEMS TO SUPPORT EVACUATION

Although this study cannot go into great depth on the subject of warning systems, they are an integral component of the evacuation process. As a result, this section only attempts to summarize some of the general research findings which can enhance the issuance of warnings to support an efficient and effective evacuation (Mileti and Sorensen, in

press; Sorensen, 1984a; 1982). In addition to the factors discussed, a variety of social and psychological factors influence the ways in which warnings are interpreted (Sims and Baumann, 1972; Mileti, 1975). Inadequate or poor warnings are a documented cause of fatalities and injuries in many disasters. Warnings are also supported by public education and information programs (Farace, 1975; Farr, 1980; Farr and Rosenthal, 1975).

Ten factors have been documented as being important to issuance of a good warning. First is the source of the information. Emergency public information or warnings that are credible and reliable are more likely to stimulate evacuation. People have different views about the credibility of others' and any one source will not be perceived as credible by an entire population. A warning message which contains endorsements by a mix of scientists, organizations, and officials is more likely to be considered credible.

Second, a warning message is more effective if it is consistent. Inconsistency in the tone or information in a message creates confusion and uncertainty among recipients (Segaloff, 1961). Message consistency is important. For example, a message stating that something bad is happening but there is no cause for concern is much less effective than a message that tells people how concerned they should be in light of the situation.

Consistency among multiple warnings is also a determinant of understanding and belief. In a study of the Rio Grande Flood, Clifford (1956) found that inconsistent information caused confusion, and, as a result, people were less likely to understand or believe that a flood was going to occur. Fritz (1957) reached the same conclusion in a study of warning responses to a wide range of disasters.

Third, accuracy of the information also affects understanding and belief. For example, Mileti et al. (1975) state that past errors in disaster warnings can cause people to doubt subsequent warnings.

Fourth, the clarity of the emergency information is important. A warning message in simple language that can be understood is more effective because people are more likely to know what is happening and what they should do about the situation. An unclear message can cause people to misunderstand or ignore it.

Fifth, a message that conveys a high level of certainty about the events taking place and the protective actions people should take is more effective than a tentative one. Even if there is a low-probability or ambiguous situation, the messages can vary in their level of certainty (even about the ambiguity). Certainty determines the level of belief in a warning and affects decision making. In a study of response to earthquake prediction, it was found that warnings become more believable as the probabilities attached to them become greater (Mileti et al., 1981). If warnings are certain, people are more likely to evacuate.

Sixth, the level of detailed information in a message influences evacuation decisions. Insufficient information creates confusion, uncertainty, and anxiety. If messages contain insufficient information, the public's response is to fill the information void. This can promote rumors or uninformed misperceptions or fears. The amount of information provided affects understanding, personalization, and decision-making. A study of family response to hurricane and flood warnings conducted at the University of Minnesota found that general and vague warnings caused people not to take protective actions (Leik et al., 1981). In a study of response to the Mount St. Helens's eruption, it was found that more detailed information led to higher levels of perceived risk, which, in turn, resulted in protective actions being taken (Perry et al., 1982b).

Seventh, messages containing clear guidance about protective actions people should take and the time available for doing so are more effective than messages that provide no specific instructions. Guidance is often necessary to encourage people to take the proper action. A study of the Big Thompson Canyon Flood (Gruntfest, 1977) found that people who received warnings during the flood were not necessarily advised what to do. As a consequence, many who were warned attempted to drive out of the canyon and were killed.

Eighth, the frequency of public messages influences evacuation behavior. People frequently do not evacuate after hearing one warning. Frequent messages can reduce the anxiety of waiting to confirm what is happening or to learn more details, thus, reducing the effect of misinformation and misperceptions. Frequency affects hearing, understanding, believing, and deciding and is, thus, important at most stages of response. Numerous studies underscore the importance of repeated hearing of a warning as a condition for response.

Ninth,it is imperative that the specific location of the event be included in the message. Emergency warning information that clearly states the areas affected or those that may be affected by the event is most effective. Identifying a location is important in believing and personalizing a warning. For example, Diggory (1956) found that the greater the proximity to a threatened area, the greater the possibility that a message will be believed. Other studies show that more location-specific messages lead to greater levels of personalized risk (Perry and Greene, 1983).

Tenth, the channel of information plays an important role in warning response. Effective warnings use a range of possible channels instead of a single channel, thereby reaching as many people as possible in a short amount of time. Moreover, some channels appear to be more effective than others. Generally, personal communications, rather than media or siren warnings, more effectively persuade people to evacuate rapidly (Mileti, 1975; Gruntfest, 1977).

5.5 EVACUATION STRATEGIES

The feasibility of using pre-planned evacuation strategies has been challenged by evacuation planning critics (see Chapter 2). The strategies subject to question include selective evacuation, time-phased evacuation, and evacuation to designated host areas. Selective evacuation is based on estimated threats from the expected event and involves evacuating only certain pre-determined zones within larger risk areas. Time-phased evacuation involves a delineation of risk zones to be evacuated sequentially over time. Other evacuation strategies may involve selective evacuations based on demographic factors (e.g., the elderly, pregnant women) or other criteria (e.g., non-essential workers, people with respiratory problems). Evacuation to designated host areas involves ordering groups to move to a specified location or area.

Another relevant aspect of evacuation strategy (once a decision to evacuate has been reached) concerns the timing of public notification. Pre-planned strategies may include early warning to insure sufficient time to take action or delayed warning to avoid public complacency.

Research on the efficiency and feasibility of these strategies is rather scant, and anecdotal evidence provides no clear answers. For example, time-phased evacuation has been used to move people when estimated risks have increased over time, not as a strategy to increase the efficiency of loading evacuation routes. Thus, a case like Mississauga does not prove the viability of time-phasing; it only suggests that, when sequencing is based on a logical development of events, people will follow time-phased evacuation orders.

Anecdotal evidence concerning zonal evacuation provides a somewhat stronger case for this strategy's viability. For example, during Hurricane Alicia, only selected communities and parts of communities were issued evacuation notices. In Galveston, Texas, these selected areas had much higher evacuation rates than the areas that were not advised to evacuate (Savage et al., 1984). Zonal evacuation should be based on understandable boundaries. Baker, (1986) observed that ordering evacuation of only part of a county was confusing to the public. Selected zonal evacuation may be appropriate for hazards such as earthquakes that could create a threat to areas below reservoirs, to unstable slopes, or to unstable buildings (Panel on the Public Policy Implications of Earthquake Prediction, 1975).

At TMI, however, selective evacuation based on demographic criteria, which targeted groups such as pregnant women and pre-school children for evacuation, resulted in many others leaving as well--probably because basically the recommendation did not conform with people's perceptions of the risks. Young (1954) observed that a selective evacuation strategy that requires women and children to leave first is not as effective as a strategy that will keep the family together. The fact that people evacuate as family units has since been well established (Drabek, 1969).

Directing selective movements of geographically differentiated areas to a specific host area or collection center may also be problematic. Young (1954) observed that many people chose to evacuate to the homes of relatives and that this choice was more likely if the distance to the relative's home was not too great. Patterns of evacuee destinations have been well documented, although the distances travelled are less well known.

Thus, research suggests that evacuation strategies must conform both to scientifically defined explanations and to publicly defined logic.

5.6 EVACUATION MODELING

Quantitative traffic models are used to estimate the time required for populations to evacuate to safer areas. These estimates are an integral part of hurricane evacuation planning, a regulatory requirement for nuclear power plant planning, and they are also included in crisis evacuation planning. In addition, models have been developed to simulate the evacuation of buildings (Kisko and Francis, 1983). These models have had little or no application to other types of evacuation planning in the research literature.

A range of approaches have been used to develop models and time estimates. One of the simplest is an aggregation procedure which assumes a vehicle load from a given region, assigns that load to routes, and estimates evacuation time by dividing number of vehicles by road capacity estimates. Variations add other variables such as delay times, etc. This approach is used in some hurricane evacuation planning efforts (Ruch, 1981; Ruch, 1983; Stone; 1983). This is also the basic approach used for crisis relocation planning (Dike et al., 1964; Schmidt, 1970; Strope and Henderson, 1978; Stope et al., 1976; USFEMA, 1984d), and in early reactor accident studies (Aldrich et al., 1978; 1979).

A more sophisticated modeling effort was developed for the NRC to evaluate evacuation time estimates that are presented as part of Final Safety Analysis Reports (FSARs) (McClean et al., 1983; Moeller et al., 1982; Urbanik, 1981; Urbanik et al., 1980). This model is referred to as the CLEAR model (Calculates Logical Evacuation and Response). CLEAR simulates vehicle departures and movement on a network, given conditions of traffic volumes and flow (e.g., handling vehicles at intersections, queuing delays, and varying travel velocities). Assumptions concerning the time required to prepare for departure can also be manipulated. CLEAR outputs include vehicle position at any point in time, vehicle population in given zones, and time requirements for clearing each zone. CLEAR requires input data on population distribution, the transportation network, and the specification of some assumptions.

The most sophisticated evacuation time models reviewed were I-DYNEV (USFEMA, 1984c) and NETVACI (Sheffi et al., 1982). These models incorporate a traffic simulation model with a traffic assignment model (Dangermond, 1985). The latter model identifies the best traffic routes

for vehicles to follow out of the EPZ. The simulation model follows vehicles traveling on the road network and replicates the dynamics of the flow. I-DYNEV allows vehicles to travel alternative routes due to congestion, and it tracks vehicle movement on each network link. In addition, the model incorporates turn movements by accounting for traffic discharge and loadings at each intersection. The model requires data on the roadway system, traffic controls (e.g., traffic lights), vehicle demographics, and assumptions concerning trip generation. I-DYNEV is flexible in that it allows users to study special problems including selective evacuation strategies, bad weather, travel conditions, emergency traffic control, possible traffic obstructions, and alternative trip generation scheduling.

Another sophisticated evacuation traffic model is MASSVAC (Hobeika and Jamei, 1985). It is similar to I-DYNEV, except that it allows movement away from an area instead of a point. Thus, it is useful in simulating evacuation away from a coast or out of a flood plain. In addition, it allows the designation of shelter locations and simulates and tracks arrival at the shelter.

Tweedie et al. (1986) describe the process of preparing a traffic time estimate in a comprehensive fashion, irrespective of what model is used. They provide details on collecting population data from the area at risk, establishing assumptions, formulating the model, and calculating clearance times. Estimates are developed for different weather conditions and four different times of day. Walsh et al. (1983) describe a procedure for incorporating population projections into traffic-time modelling to predict evacuation times under future land-use conditions and population densities.

Few efforts at comparing models and results have been undertaken. CLEAR results have been compared to results of other traffic time estimates for the Beaver Valley, Pennsylvania, nuclear site, but bases for differences are not rigorously analyzed (Moeller et al., 1982). In addition, CLEAR has been used to predict observed traffic flow along freeways (Derosiers et al., 1984). Results indicate a close fit under certain conditions but not under others. A major deficiency of research in this area is the lack of comparative studies and model validation. Baker (1986) observed that the time required to clear Tampa Bay during Hurricane Elena was much less than estimated. In other areas such as the Florida Panhandle, the estimates were fairly accurate.

Assumptions of these models have been heavily criticized as discussed in Chapter 2. Little research has been conducted to validate model assumptions under actual evacuation conditions. For example, traffic flow speeds and road capacities under evacuation conditions are largely unknown (USFEMA, 1984d). Behavioral studies are used to develop some model assumptions such as destinations, departure delays, and number of vehicles used (Ruch, 1983; 1981). However, the behavioral intentions used by Ruch likely do not resemble actual emergency behavior. Few comparisons of intended behavior to actual behavior have been undertaken. Moreover, behavioral data collected after evacuations have not provided

the details necessary for model validation. Models usually treat trip origins as input data, based on field counts of daytime and nighttime population. Recently Glickman (1986) has developed a model to estimate time-of-day variations in total population within various urban environments.

Brand (1984) provides a detailed critique of assumptions used in estimating the time required to evacuate New York City under crisis conditions (Strope and Henderson, 1978). Brand's analysis suggests that, instead of taking two days to evacuate New York City as estimated by Strope and Henderson, it would take closer to two weeks. It seems that what the two studies actually accomplish is to band the problem with high and low estimates. The actual time, which may be somewhat irrelevant to developing evacuation plans, likely falls between the optimistic and pessimistic cases.

5.7 SPECIAL POPULATIONS

Special populations include those people whose needs may not be met by general evacuation planning. A fairly comprehensive listing of special populations, modified from Lindell et al. (1985), is provided in Table 5-1. These populations may be special due to location or population attributes, and they may be concentrated or dispersed. For example, institutional populations, such as people in prisons, hospitals, nursing homes, day care centers, schools, or nurseries, may present certain evacuation problems because of their concentration. Others, such as non-ambulatory, deaf, mentally retarded, or foreign-speaking persons may be dispersed throughout a risk area, which creates different problems. Some special groups may possess characteristics of both. In a tourist area, hotels may concentrate people needing special evacuation attention (e.g., foreigners who do not understand English).

The problems that lead to special evacuation planning vary by group. Some may need more warning time because it takes longer to mobilize and move. Others may not be able to hear the warning. Some may lack transportation to evacuate. Others may need special assistance in moving. Still others may require special medical attention during and after the evacuation.

Very little research has been conducted on the process of and problems encountered in evacuating institutionalized populations (Quarantelli, 1980). Perhaps the best documentation of time and resources needed to evacuate hospitals and nursing homes comes from the Mississauga evacuation (Burton, 1981). A chlorine spill made it necessary to evacuate three hospitals and six nursing homes. No major problems arose to prevent the evacuation, but some issues still surfaced.

Pinellas County (1986) extensively documented its experience with evacuating special populations during Hurricane Elena. Three hospitals (211 patients) and 19 nursing homes (1,860 residents) were moved. The largest hospital with 116 patients took 5 hours to evacuate. The average

time to complete an evacuation of a nursing home was 6 hours. The hospitals were evacuated using five regular and nine wheelchair-lift buses.

Several problems were identified from this experience:

1. these facilities were not given an early warning,
2. transportation from the nursing homes was inadequately coordinated at times,
3. buses frequently arrived late as a result, and
4. some buses designated for use in evacuating nursing homes were diverted by law enforcement officers for other uses.

In addition, local television stations did not use visual text to warn the hearing-impaired. Despite a system to preregister people with special needs, many who had not registered called the 911 number or other agencies (often more than one), to request evacuation assistance. As a result, many of them had already left when ambulances arrived to assist them.

There is a debate about including the elderly as a special group that would need additional evacuation planning and assistance. Some would argue that the elderly already have support structures and do not need special assistance. Others also conclude that the elderly are just as likely to hear warnings as are others (Hutton, 1976). On the other hand, researchers have found that the elderly are at a disadvantage during emergencies and that they require medical assistance during the evacuation period (Pinellas County, 1986).

Special evacuation planning is often needed for other types of facilities. Industrial facilities could possible move inventories or equipment to avoid damages. Commercial establishments could have customers to evacuate. The lack of planning for these types of facilities is noted in the literature. Anderson (1970) discussed the problems encountered by a car dealer during the Cresent City, California, tsunamis. Sorensen (1986a) identified a problem in warning people in movie theaters and shopping centers during the Cheyenne, Wyoming, flash flood.

People with pets are beginning to be noticed as a special planning group. The experience at Mississauga identified pets as a problem (Burton, 1981). People who left pets behind wanted to return to care for and feed them. People who take pets with them frequently will not be allowed into shelters. At least one evacuation plan has explicitly addressed the problem by arranging a pet care center outside the risk area for Shoreham Nuclear Power Plant.

Some issues are addressed in the context of crisis relocation planning, such as medical problems or prisons, which have broader applicability to evacuations for other types of hazards. The potential medical problems in a large-scale evacuation have been identified but not fully resolved (Lancy et al., 1976; Geiger, 1984). Evacuation problems associated with relocation of minorities (National Capitol Systems, 1981)

and prisons and other penal institutions have received brief research attention (Steen and Ryland, 1982; Ryland and Enns, 1976). The former study identified three options for movement of prisoners including dismissal of low risk prisoners, movement to other prison facilities, or movement to improvised facilities. Pinellas County (1986) found that, while they had national guard troops to support the movement of prisoners if needed, they could not find any adequate facilities, given the short time frame.

A study is currently underway to look at generic evacuation planning issues in schools and how to address those issues (Gant and Adler, 1985). Sorensen (1986b) identified a number of schools that were evacuated due to chemical accidents and found that a variety of strategies were successfully used:

1. Students were dismissed early to walk home.

2. Early dismissal was supported by calling for buses to take children home.

3. Children were bused to another facility and were taken home after school or were picked up by parents.

4. Parents were permitted to pick children up at school and those remaining were transported home.

The strategy that works best seems to be determined by the nature of the problem and the local practices and customs.

Evacuation research to support planning for geographically dispersed groups is also scant. Problems of foreign-language and minority populations have been extensively researched (Perry and Greene, 1982b; Perry and Mushkatel, 1984; Nigg, 1985); however, problems still exist with implementing the findings of this research. For example, hurricane evacuation planners in certain regions of Florida have only recently acknowledged that Spanish-speaking persons required warnings. Prior to Hurricane Iwa, officials had difficulty warning non-English speaking people (Chiu et al., 1983).

Tourists are another special population which may require special planning. In the 1981 Hurricane Iwa in the Hawaiian Islands, local officials had problems deciding how to warn the tourists (Chiu et al., 1983). There has been very little research on evacuating tourist areas such as beach communities, resorts, or cities with large seasonal tourist populations.

Evacuation planning research on other types of institutions and populations identified in Table 5.1 is less well-developed. Improvements in research on evacuation problems for most types of special populations are needed. In addition, more work is necessary to provide adequate planning guidance.

Table 5.1. Facilities and populations with special planning needs

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Facilities

Health related

- Hospitals
- Nursing homes
- Halfway house (drug, alcohol, mental health)
- Mental health institution
- Retirement communities

Penal

- Jails
- Prisons
- Detention camps
- Reformatories

Assembly and athletic

- Auditoriums
- Exhibition halls
- Gymnasiums
- Stadiums

Amusement and recreation

- Beaches
- Campgrounds
- Conference centers
- Amusement parks
- Parks and natural areas
- Golf courses
- Ski areas
- Community recreation centers
- Marinas
- Movie theaters and drive-ins

Educational

- Day care centers
- Preschools
- Schools
- Specialty schools
- Colleges

Table 5.1. (continued)

Religious
Places of worship
Group centers
Residential
Hotels/motels
Apartments/condominiums
Mobile home parks
Dormitories
Transport
River/lake
Dam locks
Terminals (air/train/bus/ferry)
Rest areas
Roads
Commercial/industrial
Shopping centers/stores
Downtown business districts
Industrial parks & buildings
Restaurants
Office buildings
Populations
Mentally handicapped
Mobility impaired
Hearing impaired
Visually impaired
Elderly
Tourists
Foreign language speaking

(Modified from Lindell et al. 1985)

5.8 SHELTERING

Sheltering has been divided into four categories: emergency shelters, temporary shelters, temporary housing, and permanent housing (Quarantelli, 1982b). The categories differ with respect to the time inhabited, permanency, and resources to support evacuees. These four types are refuges for evacuees and not shelters to protect populations from disaster effects. Shelter in the context of evacuation primarily refers to the first two types which provide temporary residences for evacuees.

Shelter has been a direct topic of only a modest amount of research, more has been done in the context of a broader disaster study. Several specific case studies of sheltering processes have also been conducted (Klausner and Kincaid, 1956; Quarantelli, 1982b). Consequently our knowledge about sheltering is generally limited to case studies, particularly as it constrains evacuation logistics.

For small-scale evacuation, there is no evidence that sheltering is a significant constraint to evacuation. In fact, most studies observe that sheltering capacities are greater than demand (Drabek, 1969; Cutter and Barnes, 1982). An exception was that, during Hurricane Alicia, it was observed that the lack of sheltering off Galveston Island likely prevented some people from evacuating, although the impact was not measurable (Savage et al., 1984). At times, demands on individual shelters may exceed capacity. People may arrive at shelters before they are opened or go to shelters to which they were not assigned (Pinellas County, 1986). In addition, anecdotes of shelter problems abound. These include lack of food, lack of beds, poor management and operations, poor access to information, inadequate sanitary facilities, lack of heating and cooling, lack of health care, interpersonal problems, and so forth. Yet such hardships are usually endured without great difficulties or losses.

At a pragmatic level, such problems do not occur because of a lack of knowledge regarding sheltering but because of a lack of planning, inadequate resources, or poor implementation. It is likely that sheltering efficiency and efficacy could still be marginally improved by a better understanding of shelter use and management. This has been largely accomplished by building on previous experience and revising practices on the basis of incremental learning (Forrest, 1979).

Demand for shelter by evacuees is fairly well documented. Rarely does more than 15 to 30% of an evacuating population use an official shelter--most people stay with friends, relatives, or at a motel. One exception was that 40% of the Hurricane Elena evacuees used an official shelter. No good explanation for this anomaly has been found.

While this study cannot cover the topic of protective shelter, it should be noted that evacuation does involve movement to a protective shelter and that sheltering is often an alternative to long-distance

evacuations. Issues associated with protective shelter include availability, identification, ability to establish safety, crowding, and resource availability.

Although sheltering on a small scale may not be highly problematic, it is unclear whether such experiences can be used to generalize large-scale evacuations of cities. Research has been conducted on sheltering requirements in the context of CRP. Aspects studied include food for evacuees (Billheimer and McNally, 1982; Billheimer et al., 1975), shelter management (Chenault and Davis, 1975), construction of shelters (Wichham and Tidemann, 1978), and shelter availability (White, 1975). Such research has been translated into planning guidance for host areas (USDCPA, 1979b).

It is fairly clear from this research that it is possible to understand shelter needs for a given level of evacuees. Uncertainties that remain still include how many evacuees would need shelter, where people would go, and what level of resources could be provided. For example, research would suggest that under certain assumptions it would not be possible to adequately shelter populations in rural areas. Despite the fact that planners could estimate what is needed, distribution systems would not be adequate. Platt (1983) has carefully researched sheltering resource requirements for a crisis relocation to a host area and has concluded the resources would be inadequate to support the relocated population.

An aspect of shelter management and evacuation planning that is just beginning to receive attention concerns the psychological impacts of the evacuation/sheltering experience (Bolin, 1985; Quarantelli, 1985b) and the provision of psychological services (Sowder, 1985). Psychological problems have been noted to be more of concern in large-scale, long-term relocations following a severe disaster. Children may be particularly vulnerable (Bolin, 1985; Redlener, 1984). Evacuees who have experienced life-threatening circumstances or have lost kin or friends may also be susceptible to mental health problems (Bolin, 1985).

5.9 EVACUATION COST

The total cost of evacuations conducted yearly in the United States are unknown for several reasons. First, we have a poor accounting of all evacuations and their dimensions. Second, difficulty exists in identifying and aggregating all costs including secondary ones. Third, identifying the benefits of evacuation presents another difficult problem. Finally, the costs of damages caused by a disaster are difficult to determine.

Several evacuations that involved little or no physical damage have been studied to determine evacuation costs. These include the TMI evacuation (Flynn and Chalmers, 1980) and the Mississauga evacuation (Burton, 1981). For TMI, the direct and indirect costs to evacuating families have been estimated using survey data. On the average, the estimated cost to an evacuating family was about $300; and the cost to a

nonevacuating family was about $40 (Flynn and Chalmers, 1980). The actual evacuation cost was about $200, with the remainder representing lost income. Given a median length of stay for evacuees, the average daily expense per family was about $40. Only 20% of the evacuees reported a pay loss which averaged $500. Overall Flynn and Chalmers estimated the total cost of the TMI accident to families within a 15-mile radius to be $18 million.

Direct costs to business and industry have also been estimated by the State of Pennsylvania. Business losses during the week following the accident have been estimated at $106 million which translates into an income loss of between $10 and $14 million (Flynn and Chalmers, 1980). Estimates of the amount of that loss that was offset after the accident or the indirect or secondary impacts that occurred are almost impossible to estimate.

Cost estimates were made in a similar manner for the Mississauga evacuation (Burton, 1981). The average estimated cost of the evacuation to a household was $220, plus $90 in lost wages. Average duration of the stay was three days. Taking into account the difference in the value of Canadian currency, the average daily cost of the evacuation was about $58 (U.S.). Total direct costs were estimated at $17 million (Canadian) with an additional income loss of $8 million (Canadian). About 27% of the evacuees reported income loss. Thus the average loss per household for those reporting was about $450 (Canadian). Loss of business income was estimated at $50 million. The Mississauga study also provides some breakdown on costs. Travel averaged 12% of the total cost, accommodations about 20%, additional food expense about 38%, and miscellaneous expenses about 30%.

If we compare the two evacuations, we find very similar cost estimates, particularly if duration and fixed costs are taken into account. From these results the direct cost of evacuation expenses could be estimated at about $25 for transportation plus another $40 per day the family remains evacuated. Indirect loss such as wages and business loss including secondary impacts are more uncertain and will likely vary according to location and circumstance.

Comparable estimates for hurricane, floods, or other natural disasters are not readily available. Some estimates have been prepared for the costs of false alarms for hurricane evacuations, but the estimates are largely speculative (Baker, 1985). Economic investigations of disasters have focused on direct damage rather than on emergency response costs to evacuees or emergency organizations (Cochrane, 1975).

5.10 RELOCATION AS EVACUATION

The relationship between temporary evacuation and permanent relocation due to risk and disaster has been explored at a theoretical level (Aquirre, 1983). Many of the social processes associated with evacuations may parallel population mobility in general. Empirical studies to date on post-disaster impacts have not really captured relocation

processes as they have looked at larger social aggregates. Motz (1983) has developed a social psychological framework for investigating the social impacts of relocation, but this has not been applied to a disaster-induced relocation. Recently Quarantelli (1985a) has provided a conceptualization of relocation to distinguish it from evacuation. In this paper, he distinguishes relocation from evacuation as being a single-direction move without a return trip. It is also a movement of a way of life, not just people. Furthermore, Quarantelli characterizes it as a difficult process that is appropriate only in rare circumstances, has numerous institutional and political obstacles, and can only be undertaken in a manner compatible with the group being moved.

Several studies have investigated the relationships between warnings, emergencies, and mobility decision making (Kielcolt and Nigg, 1982, Goldhaber et al., 1981). The former concluded that increased earthquake threat in Southern California was not a salient dimension of mobility decisions. While people may be aware of the threat, the existence of an ambiguous threat does not lead to relocation. This finding is supported by Mileti et al. (1981). Likewise Goldhaber found that the TMI accident did not play a major role in mobility decisions after the event.

Fowlkes and Miller (1982) investigated relocation as part of a larger survey of victims of the Love Canal, New York, hazardous waste dump incident. The major issues during that incident were trust of public officials (regarding the extent of the problem) and the competence of government agencies (regarding adequate handling of the situation). The relocation process was stressful for those involved, particularly because decisions and settlements took a long time. A similar set of problems was encountered at Times Beach, Missouri, following the discovery of dioxin.

Perry and Mushkatel (1984) investigated the relocation of an entire community to avoid a flood hazard. Their findings, summarized in the previous chapter, parallel those for other types of relocation (e.g., for reservoir and highway construction). From this case study, principles for positive relocation planning are developed. First, the community to be relocated should be organized. Second, citizens should be involved in the decision making at an early stage of the process. Third, social and personal needs including the preservation of social ties and networks are important considerations. Fourth, citizens must be made aware of the political processes involved and that political support is necessary for a successful relocation. Fifth, conflicts should be expected and openly dealt with when they occur.

Thus, relocation appears to be a more complex problem in some ways than evacuation. The extended time frame, large expenditures of resources required, increased opportunity for political involvement, and greater social impacts help differentiate relocation from evacuation. The research to date on relocation does not provide a strong body of knowledge on which to develop improved planning. Further case studies and systematic investigations of relocations would improve that knowledge.

6. RESOLVING THE ISSUES

6.1 INTRODUCTION

6.1.1 Approach

This chapter addresses the issues raised in Chapter 2 in light of the policy and planning for evacuations discussed in Chapter 3 and the behavioral and planning research findings presented in Chapters 4 and 5. These are addressed, first, as general multihazard evacuation issues and, second, as hazard-specific issues unique to a particular hazardous event. These issues are summarized in Table 6.1. In comparing issues to research findings, conclusions are reached on (1) whether an issue exists, (2) whether it has been adequately addressed by research, (3) whether the issue is valid in light of research findings, (4) whether new research will help resolve the issue, and (5) whether there is sufficient knowledge to examine existing evacuation policy on the issue.

6.1.2 Confronting Issues on Nuclear Crisis and War

Some issues concerning nuclear-war-evacuation planning are sufficiently unique that they deserve special attention. In this section these are analyzed based on existing research. Since planning for nuclear war, evacuating has been a topic of great controversy and since there is a lack of empirical evidence, a philosophy of analysis is first discussed.

Essentially, evacuation planning for nuclear war survival is a political decision. As such, the decision involves two types of planning: (1) as a part of a country's strategic defense policy and (2) as planning for citizen evacuation in a threat situation. The first involves relocation of population to provide the country with better resources for dealing with a confrontation and to protect the population in the event of a nuclear exchange. The second is planning for spontaneous or protective evacuation not linked with defensive military planning. Politically both planning postures have been in and out of favor. It is not the purpose of this study to support or reject planning on political grounds.

Planning for any type of evacuation is feasible. Evacuation can move people from high risk areas. The effectiveness of doing so varies in part with the level of planning and the availability of resources. It is probably possible to have evacuation plans that theoretically can evacuate large numbers of people in a wartime scenario. Historical evidence from England, France, and Germany points out that this can be done under certain circumstances. It is beyond our knowledge to prove that it can be done under all possible nuclear war scenarios. It should be noted, however, that even given the absence of plans or with some

Table 6.1. Summary of evacuation issues

Physical Hazard Characteristics

Uncertainty in ability to specify hazard parameters.

- Location
- Timing
- Magnitude
- Effects
- Secondary Hazards

Uncertainty in ability to detect hazards.

- Scientific ability
- Lack of physical cues

Hazard characteristics constrain evacuation effectiveness.

- Speed of onset

Planning increases the threat or risk of hazard.

- Planning increases the likelihood of an event

Warning Characteristics

Uncertainty in ability to alert.

- Lack of warning systems
- Timing of warnings
- Information withholding
- Inadequate communication
- Risk not revealed
- Warnings not issued to certain groups
- Sirens not heard

Information constrains evacuation.

- Special terminology
- Probabilistic information
- Multiple messages
- Inadequate content
- Credibility
- Frequency
- Siren use

Table 6.1. (continued)

Social Issues

Social factors color risk perceptions.

- Mitigation measures
- Prior experience
- Depersonalization of threat
- Fear of radiation
- Denial of hazard
- Denial of need for preparedness
- False alarms

Factors color the ability to receive warnings.

- Culture and ethnicity
- Disbelieve ability to detect or predict
- Lack understanding of risk

Factors affecting the ability to evacuate.

- Economic resources
- Special or institutional populations

Organizational Issues

Planning elements are inadequate.

- Coordination of planning is lacking
- Inadequate planning for shelters
- Lack of plans
- Planning for secondary hazards
- Definition of emergency planning zones (EPZ)
- Plans for institutional facilities and special populations
- Planning for reentry
- No support for planning
- Planning for emergency resources to support evacuees
- Planning for medical and health care of evacuees
- Planning for extended evacuations
- Planning uses the wrong assumptions

Training of evacuation personnel is inadequate.

The technical basis for evacuation planning is inadequate.

- Evacuation time estimates are inaccurate
- Plans will lead to unnecessary evacuation
- Organizations for developing plans are lacking
- Organizations with responsibilities downplay the hazard

Table 6.1. (continued)

The technical basis for evacuation planning is inadequate. (continued)

- Knowledge not transferrable
- Dissemination of technical knowledge is poor
- Population at risk is unknown

Response Issues

Physical factors constrain evacuation.

- Population is too dense to evacuate
- Population in areas with seasonal peaks
- Boats will interfere with island evacuation
- Traffic accidents will constrain evacuation

Public behavior.

- People will hold parties instead
- Evacuation shadow
- Panic
- Convergence
- Spontaneous evacuation
- Aberrant behavior
- People won't use specially designated routes
- Stress will occur due to evacuation
- People won't obey officials
- People won't evacuate for long periods of time
- People don't know how to evacuate
- People will shelter instead
- People will not go to designated host areas
- Total social chaos

Emergency worker behavior.

- Role abandonment
- Denial of evacuees
- Erosion of leadership
- No outside support

Evacuation not perceived as a public good.

- Evacuation puts people at greater risk
- People have right to stay
- Evacuations create liabilities

planning, people will evacuate to safer areas when or if they feel themselves unsafe. This evacuation will, as all others do, have costs. Evacuation as a protective strategy for any hazard is not a zero-risk undertaking, a guaranteed means of saving everyone at risk, nor a country-club experience.

Due to the nature of the problems posed by the hazards of nuclear war and a lack of experience on which to establish scientific evidence, we largely do not know how many people could or would evacuate, how smooth the evacuation would be, or how comfortable it would prove to be for the evacuees. Arguments of logic can be used to support varying levels of effectiveness. Reasonable hypotheses can be offered but are not provable. With this in mind, our best hypotheses are offered with the caveat that the actual outcomes are not fully known.

6.2 ISSUES CONCERNING PHYSICAL HAZARD CHARACTERISTICS

6.2.1 Uncertainty in Ability to Specify Hazard Parameters

6.2.1.1 Location, timing, magnitude, and impacts

There is little doubt that the uncertainties in specifying the nature and behavior of physical hazard (including the timing, the magnitude, the probability, and the area of impact) from events are major issues in evacuation planning. This general issue is manifested in a variety of ways for each hazard included in this study. Uncertainties seem to arise for three reasons. First, most of the physical systems that create hazards behave in a random or a stochastic way which create probabilities and uncertainties for the evacuation planner. Second, the theories and the models used to predict hazards are inadequate or fail to develop a means of accurate prediction of some threats. Third, the collection of data that could be used to obtain more accurate prediction is limited by technology or resources.

One problem that is linked to this issues is that of false alarms. While some false alarms are created by human error or equipment failure, most false alarms are likely attributable to inability to predict hazard timing, location, or magnitude, (e.g., a tsunami). A second and by far more serious problem is the failure to evacuate threatened populations. As basic and applied research on physical hazards and their causes reveals new knowledge and as that knowledge is incorporated into planning and detection, uncertainties will be removed. It is beyond the scope of this study, however, to judge what research is needed to improve hazard prediction.

6.2.1.2 Secondary and multiple hazards

Volcanoes, hurricanes, and earthquakes have multiple hazards for which evacuation is a viable component of protective action. The ability to detect and specify the nature of these hazards is critical to

effective evacuation planning; however, the current state of knowledge about the relationships among the multiple hazards and hazard effects constrains evacuation planning. These uncertainties also make it complicated to plan for the variety and range of possible contingencies that can arise. This complexity may be reduced somewhat by taking a generic approach to planning, but the links between primary and secondary hazards still need to be specified. Additional research on this issue would improve this process.

6.2.2 Uncertainty in the Ability to Detect Hazards

6.2.2.1 Scientific ability

Using evacuation as a protective action could be ineffective because the onset of some hazards is difficult to detect, let alone specify. This inability to detect hazards exists, partly, because currently available engineering expertise is not properly applied to the technology of detection and, partly, because of a lack of detection instruments. This deficiency poses serious problems when fast-moving events, such as flash floods or in dam failures, make immediate detection and population evacuation critical. For slow-moving events, this is less problematic because there will probably be adequate time to evacuate threatened populations.

6.2.2.2 Physical cues

Physical cues are important determinants of evacuation behavior. It is easier to achieve high levels of evacuation when cues are present to aid detection. For some events such as sunny-day dam failures or floods, radiation accidents, some chemical accidents, and some nuclear war scenarios, visual cues are essentially lacking. Substitution of visual cues in the warning process may help overcome this constraint, but the specific impacts of variation in the style and content of warnings on propensity to evacuate is largely unknown.

6.2.3 Hazard Characteristics Constrain Evacuation Effectiveness

The speed of onset of some hazard events is a major problem for effective evacuation within a subset of hazards. If a 90-second warning is available for an earthquake, a 10-minute warning for a dam failure, or a 20-minute warning for a nuclear war, what evacuation plans will maximize public protection? These short warning times present challenging scenarios for planning. This does not mean, however, that evacuations are not feasible--both earlier detection and better planning may enhance evacuation feasibility. However, the body of knowledge does not currently exist to optimize planning for fast-moving events or fast-developing concurrent hazards.

6.2.4 Planning Increases the Threat or Risk of Hazard

Critics have argued that emergency planning increases the likelihood of nuclear war and the probability of nuclear power plant accidents. There has been no research to prove or disprove the validity of this argument. Logical arguments can be formulated to support either opposite positions or a "no effect" conclusion. The motivation for preparing such arguments is largely ideological or political in nature, and further research is unlikely to change that.

A related issue that is more relevant and more important is whether evacuation plans increase the threat or consequences of a hazard if it occurs. Planning may allow increases in population in areas at risk or may justify not implementing other types of mitigation measures for protection. A further issue is that the evacuation plan may fail. Anecdotal evidence suggests that all three problems occur for different hazards. Research on this topic should be in broader programs of hazard management. However, such research would not greatly enhance evacuation planning but could improve hazard mitigation policies overall.

6.3 ISSUES CONCERNING WARNING CHARACTERISTICS

6.3.1 Uncertainty in Ability to Alert

6.3.1.1 Lack of warning systems

Critics argue that existing warning systems are inadequate to inform the public to evacuate. This lack of warning capability exists both at the local level and nationwide. The absence of warning systems can be attributed to three major factors. The first is a lack of a national policy in some areas and for some hazards to guide development of emergency programs. Second, existing policy may actually discourage the adoption of warning systems. Third, there may be a lack of resources for implementing the warning systems. The hazards for which warning systems do not exist are those recently defined as hazards that have not been the cause of any major catastrophes in the United States. These includes earthquakes, hazardous material accidents (both fixed-site and transportation), dam failures, and flash floods. Extending the adoption of warning systems is not limited by knowledge but by policy and resource availability.

6.3.1.2 Timing of warnings

The speed of onset of some hazards dictates that warnings be issued within very short time frames. For a number of hazards, including flash floods, local tsunamis, fixed site hazardous materials events, and transportation accidents involving hazardous materials, the effectiveness of current warning dissemination mechanisms and capabilities is questionable because of the lack of warning system hardware and appropriate planning. In many locations, the ability to evacuate depends on the

existing resources and the ability of emergency workers to provide warnings. In some cases, this will likely be inadequate depending on the impact of the event. Nuclear power plants have developed systems that can provide quick alerts, but the systems' ability to provide instructional information about protective actions remains questionable. Additional research is needed to improve planning for issuing short-time warnings to support both evacuation and other forms of protective action.

6.3.1.3 Warnings and information will be withheld

There is public concern that persons and organizations involved in the evacuation warning process may withhold information for a variety of reasons. Anecdotal evidence from case studies indicates that, on occasion, some warning or parts of a warning to support an evacuation are indeed withheld from the public. Often this is done by rationalizing that the public will panic, that the evacuation will be expensive, that it will be a false alarm, or for some other reason. For certain hazards, such as hazardous material accidents or nuclear power plant accidents, it has been alleged that it would be a conflict of interest to order an evacuation or inform the public. Research does not indicate how prevalent this problem is in reality. Furthermore, the conditions under which information is withheld have never been systematically identified or analyzed but doing so would unlikely improve evacuation planning.

6.3.1.4 Inadequate organizational communication

In some cases, inadequate organizational communications have led to poorly implemented evacuations. Research has indicated that communications play a major role in determining the operational effectiveness of organizations in emergencies. While poor communication can impede effective evacuation, it does not preclude successful evacuation. The conditions that lead to good vs poor organizational communication in emergencies are not well understood. Hypotheses based on organizational theory could be developed and tested to improve our understanding of failures.

6.3.1.5 Risks not revealed to warning organizations

The ability to evacuate depends on good communication between the hazard detectors and those who will disseminate the warning (i.e., the risks and the area potentially affected) in a timely fashion. There are certainly reasons to suspect that there is a problem for some hazards, including fixed site accidents and accidents involving the transportation of hazardous material. Although the problem has surfaced as an issue for nuclear power, the existing regulations, as written, address this broader concern.

6.3.1.6 Warnings will not be issued to transient populations

Transient populations do present difficulties in disseminating evacuation warnings. Anecdotal information suggests that there have been problems with warning vacationers of impending hurricanes and with warning campers in recreational areas to evacuate because of flash floods. Little systematic data exist on the receipt of warnings and the evacuation behavior of transient populations. Research on this topic could be valuable in developing evacuation plans in areas where large transient populations might be exposed to threats.

6.3.1.7 Siren systems cannot be heard

Considerable research has been done on receipt of warnings in general, and some research has specifically investigated the receipt of siren warnings. This research has indicated effective warning methods as well as the problems involved in issuing warnings. While the issue of the effectiveness of using sirens in warning systems has some validity, it is well established that warnings from sirens can be heard, and no further research is needed to demonstrate this fact.

6.3.2 Information Constrains Evacuation

6.3.2.1 People do not understand warning's special terms

The topics of warning clarity and evacuation behavior have been fairly well researched and the generalized relationship well demonstrated. Lack of clarity in a warning message constrains response (e.g., the lack of understanding of special terms that have a specific meaning for evacuations). Warning policies could be reviewed to determine the extent of this problem, but additional research is of low priority.

6.3.2.2 Probabilities are not understood or are misinterpreted

Some limited research has shown that, while it is true that people do not fully understand probabilistic information given in a warning message, it is also true that people do not pay much attention to probabilities that are included in warning information. Additionally, officials who issue evacuation orders have a better understanding of probabilistic information but do not use it in deciding to evacuate. These conclusions are mainly derived from experimental studies on hurricanes and should be validated by studies of experience in actual hurricanes. The current Parkfield earthquake prediction for California provides a good opportunity to study the use of probabilistic information in a field setting.

6.3.2.3 Multiple messages create confusion

Multiple sources of conflicting advice regarding evacuation can arise in extended or long lead-time situations. Considerable research suggests that this issue is a valid concern. Inconsistency in warning information creates confusion and leads to indecision. No further research is needed to confirm this. It should be addressed as a policy issue for such hazards as hurricane, earthquake, volcano, and other similar events for which there is a potential problem.

6.3.2.4 Warning content is inadequate

Inadequate message content does constrain evacuation. The problem exists, however, in defining what is adequate. At this point, research has outlined what is believed to be necessary, but that base of knowledge can be improved. Additional research on effectiveness of alternative message content is needed to fine tune warning message content. Implementing what is currently known in practice is the second issue of great importance. The state of knowledge about effective warning content is not reflected in practice in many evacuation situations.

6.3.2.5 Warning credibility

It is well known that credibility of information affects its use by potential evacuees. Research has shown that credibility is an important factor in evacuation decisions and has illustrated some of the ways it may constrain evacuation efforts. General knowledge would offer some ideas on how to deal with credibility problems and on how emergency warnings could be made credible. The precise ways in which credibility effects evacuation decisions have not been sufficiently researched to understand when credibility specifically interferes with evacuation behavior. This is not high-priority research.

6.3.2.6 Frequency of information

In extended warning periods, people want to receive information frequently. Typically, people want more information than is being disseminated. This runs counter to images of a public confused by an overload of information. In most warning situations, the public actively seeks out information in the process of confirming the warning. Furthermore, frequency of information receipt is positively related to evacuation behavior. On the basis of this knowledge, policy regarding frequency of warning should be reviewed for hurricane evacuation and for other hazards with potentially long lead times.

6.3.2.7 People do not understand sirens

Some research suggests that siren systems have failed to provide good evacuation warnings to the population. The effectiveness of siren systems, however, is not precisely understood, particularly in different social settings. Their chief function is to alert people to seek additional information. In actual emergency conditions that call for rapid evacuation, the reaction of people to sirens is largely unknown. Further behavioral research would provide a more solid base for making decisions on siren effectiveness and on how much education and training are needed to support an effective siren warning system.

6.4 ISSUES CONCERNING SOCIAL CHARACTERISTICS

6.4.1 Social Factors Color Risk Perceptions

6.4.1.1 Mitigation gives a false sense of security

There are many reasons why people who are advised to evacuate choose not to do so. One general reason is that people perceive themselves to be safe. It is likely that in some situations the presence of a mitigation structure, such as a dam or a seawall, influences the perception of personal risk. People may believe that the protective structure obviates the need to leave their homes, and they may fail to consider the possibility that the structure may fail. The strength of this belief and the extent to which it operates to constrain evacuation is not known. Additional research could be done on the topic as part of more comprehensive behavioral studies but special research is not warranted.

6.4.1.2 Experience

Experience with a prior evacuation is believed to influence human behavior in a subsequent threat situation. Research is fuzzy, however, about the nature of the effect. Five possibilities have been identified. First, people who narrowly escape or those who stay and actually experience the event are more likely to evacuate if another threat materializes. Second, people who evacuate and avoid the disaster are more likely to evacuate when threatened again. Third, people who stay and experience minor effects of the event are less likely to evacuate the next time. Fourth, people who leave unnecessarily are less likely to evacuate should the threat occur again. Fifth, people without any prior experience are more likely to evacuate. The strongest support exists for the third and fifth statements. Anecdotal evidence does not support the fourth statement. The first two statements are largely untested. Sorting out these relationships is important to improve planning in areas that may have recurring evacuations.

6.4.1.3 Depersonalization

Depersonalization occurs when people acknowledge the existence of a hazard but deny that it will affect them personally, "It cannot happen to me." People who depersonalize a threat are less likely to evacuate. Research suggests this rationale is likely a valid problem that should be addressed by warning system policy. Additional research is not necessary.

6.4.1.4 Fear of radiation

There is little evidence to suggest that fear of radiation will cause panic or massive population moves that could constrain effective evacuations. This statement is based on a limited number of observations. Should a very large amount of radiation actually be released, we can only hypothesize that human behavior would be similar to that experienced to date (e.g., TMI, where this did not occur). Additional research on human evacuation behavior during radiological accidents should be conducted following any future events.

6.4.1.5 Deny the hazard exists

Research suggests that people who deny the existence of a hazard are less likely to evacuate when the threat occurs. This denial may be the result of habitual exposure to the threat or of the rarity of the event, and it is a valid issue in evacuation planning. Research is less firm in suggesting the conditions that cause this to be a problem or the measures that can be taken to overcome such resistance.

6.4.1.6 Lack of preparedness

Mainly, the lack of preparedness has been an issue in emergency planning for nuclear war survival--in the context of lack of support for or opposition to defense policy planning. Research has shown that people who plan for an evacuation are more likely to evacuate. We can only speculate that opposition to planning would constrain an evacuation in a wartime setting. The best hypothesis is that lack of preparation of plans would constrain such efforts, but the extent to which the absence of plans would reduce evacuation is not estimable. Overall, understanding the relationship between levels of planning and response effectiveness would be valuable knowledge in determining necessary levels of preparedness.

6.4.1.7 False alarms

Contrary to popular belief, false alarms have not been a problem in getting people to evacuate when future threats occur. This conclusion is largely based on anecdotal evidence from recent hurricanes but is

also supported by experimental research. If people understand the uncertainty and basis of the false alarm, it is less likely to pose a problem when a subsequent event occurs. Further research on this topic could be conducted in a field setting if other false alarms do occur.

6.4.2 Factors Color the Ability to Receive Warnings

6.4.2.1 Culture and ethnicity

There is sufficient knowledge on the evacuation behavior of diverse ethnic groups to prevent it from being an issue. Research shows that members of societies with distinct cultural characteristics are less likely to evacuate for several reasons including language, isolation from authority, beliefs, and so forth. The problem needs to be addressed, however, as a policy issue. For example, in Los Angeles over one hundred different languages are spoken.

6.4.2.2 Disbelief in the ability to detect or predict

Some people do not trust the ability of scientists or other hazard monitors to accurately predict. This is a relatively minor issue. Information at the time of the evacuation will be more significant in shaping response behavior than pre-existing perceptions. No further research except as part of more comprehensive evacuation studies is needed.

6.4.2.3 Lack of understanding of hazardousness

This continues to be a problematic issue which constrains evacuation. For example, some people do not understand that fast-moving, high-velocity waters can float cars and buildings away, that volcanic ash creates breathing problems, or that storm surge is generally the most dangerous aspect of a hurricane. The problem is part of the larger issue of providing education and information that will enable people to more accurately perceive the risk. The topic of pre-event education and its effect on evacuation behavior requires additional research to understand how the problem can be reduced and how optimum education can be provided.

6.4.3 Factors Affecting the Ability to Evacuate

6.4.3.1 Economic resources

Research suggests that in some situations the lack of economic resources does constrain evacuation, that is, people with lower incomes are less likely to leave. In other cases, this relationship does not hold true. Additional research is unlikely to change these findings. Removing this constraint is a policy decision.

6.4.3.2 Special or institutional populations

This is a valid and important issue in evacuation planning. There are special populations and institutional populations that require specialized warnings and assistance to evacuate. The key issue is identifying the particular problems and needs of the different groups or institutions. Some research has been done on this topic, and current work is addressing some additional groups. Overall, however, the knowledge base to formulate evacuation plans for such groups is lacking and needs to be improved.

6.5 ISSUES CONCERNING ORGANIZATIONAL CHARACTERISTICS

6.5.1 Planning Elements are Inadequate

6.5.1.1 Coordination of planning is lacking

Research shows that the lack of coordination in the planning process among the organizations that will manage an evacuation can create problems that may lead to a poorly implemented evacuation. This problem has been observed in a number of different hazard events. Problems are particularly evident when events involve multiple jurisdictions and cross political boundaries. It is still unclear, however, why some organizations fail to effectively coordinate emergency responses, while others can not only overcome the problems in emergencies but also effect innovative and lasting improvements in their emergency response patterns. Additional research on organizational decision making would improve our understanding. The level of effort to be devoted to coordinating responses among various jurisdictions and different levels of government remains a policy issue.

6.5.1.2 Inadequate planning for shelters

Adequate research has been conducted on the provision of temporary shelters for evacuees. The problems in operating centers are largely understood and documented. Demand for shelters or expected use by evacuees is also known. However, whether or not this knowledge is being used by the responsible agencies for evacuation planning is an issue. The evidence tends to suggest that shelter planning for most evacuation situations is adequate.

Several special shelter issues require elaboration because they are uncertain. First is the concept of vertical evacuation in hurricanes. Ongoing research is addressing this option; however, the basis for demonstrating the logistics of moving people to the safe buildings may not exist. The safety of structures is also an issue but is beyond the scope of this report.

Second, evacuation to decontamination shelters in the event of a nuclear power plant accident or hazardous material emergency is an

issue on which little data exist. It is known that people go to a variety of destinations in an evacuation. The number of people who would go to a decontamination site would largely depend on information in the warning messages and the dissemination of the messages at the time of the event.

Third, the adequacy of shelters is an issue for large-scale evacuations such as for nuclear war. It is possible to show how much shelter is available although whether the shelters are properly located is uncertain.

6.5.1.3 Lack of plans

The development and adequacy of evacuations plans for generic and specific hazards are major issues. Neither the number nor quality of evacuation plans in this country is currently known. It is known from a review of planning and policy that the extent of planning is more problematic for some hazards (e.g., earthquakes, flash floods, hurricanes, dam failures, tornadoes, hazardous material accidents, and for nuclear war). Research is needed to measure and evaluate the adoption of evacuation planning in the United States.

6.5.1.4 Planning for secondary hazards

Anecdotal case studies suggest that evacuation plans for secondary hazards are inadequate. Notable situations include volcano-induced mudflows and floods, ashfall, sunny-day dam failures, flash floods during tornado episodes, and seismic-induced landslides. This inadequacy points out a need for research that can better support the development of plans for multiple or concurrent hazardous situations.

6.5.1.5 Definition of emergency planning zones (EPZ)

This has chiefly been an issue raised in nuclear power plant evacuation planning, although minor issues along this line have surfaced for other hazards. An EPZ is mainly developed on the basis of the physical impact area of a hazard, the resources at risk, and the feasibility of protective action. It is beyond the scope of this research to determine if the distance of ten miles for a nuclear power plant EPZ is correct. The research that has been reviewed suggests, in a different light, that the definition of an EPZ is not critical. In fact, some researchers suggest that defining an EPZ may obscure the important point that evacuation plans must be flexible enough to handle a range of scenarios that might extend beyond or affect only a small part of an official planning zone.

6.5.1.6 Plans for institutional facilities and special populations

The extent to which plans for special facilities have been developed is largely unknown. This information may exist for some types of facilities within trade associations or agency data. The technical basis for evacuation planning is largely missing for most facility types but, again, may exist within the industry. General emergency or fire plans may be adequate and useful in an evacuation.

6.5.1.7 Planning for reentry

Reentry has been noted as a problem in studies of some evacuations, including hurricane Diana and the Mississauga train derailment. Reentry criteria are rarely specified in detail in evacuation plans. Reentry problems are often exacerbated by poor organizational coordination, by lack of communication with technical experts, and by media reports.

Issues associated with reentry have been identified. The first concerns the decision as to who should be allowed into evacuated areas before the general population is allowed to return. The second concerns the management of people who attempt to converge into the risk area merely to observe. Both issues have implications for the assumption of liability as well as for the planning of resource use.

6.5.1.8 No support for planning

There are hazards and situations for which people oppose the development of evacuation plans. Actually, there are two types of opposition: ideological and fiscal. People and communities have opposed the development of evacuation plans for nuclear war and nuclear power plant accidents as a political statement. This will likely continue as a political strategy. People also oppose planning because they do not want to spend money for plans, or they view other needs as having more priority. This is part of the normal process of democratic decision-making. While support for and opposition to emergency planning is an interesting research question, it is not of great priority.

6.5.1.9 Planning for emergency resources to support evacuees

The main difficulty in researching this issue is establishing valid assumptions about the character of the evacuation (i.e., how many people would evacuate and for what length of time). Research demonstrates that it may be feasible to relocate resources such as food and water if sufficient supplies are available, if transportation is fully mobilized, and if people evacuate to planned areas. Research also shows that this may be difficult to achieve for certain host areas depending on the size of the incoming population. There is no solid empirical support for most of these assumptions.

6.5.1.10 Planning for medical and health care of evacuees

Evacuees typically will include many people who require special medical attention. Much of the discussion in the section on planning for special populations and institutional facilities applies to this issue. The chief difference is one of scale, and insufficient knowledge exists to know whether or not such planning for medical needs is feasible.

6.5.1.11 Planning for extended evacuations

An extended evacuation in which no attack occurs presents a difficult situation. Research suggests that, if such is the case, some people who evacuate will return. The numbers and timing of return trips cannot be estimated. Even without an officially ordered evacuation, it is likely that the government will have to provide substantial advice during a crisis situation. This issue has both policy and research implications. Clearly a policy is needed to guide this matter. Research is needed to provide the basis for the policy.

6.5.1.12 Planning uses the wrong assumptions

Research has shown that planning for evacuations should cover a range of scenarios, although considering every single scenario is not possible. Plans should be flexible enough to handle a range of scenarios or new contingencies. There is no reason that this philosophy should not apply to war threats as well.

6.5.2 Training of Evacuation Personnel is Inadequate

Better training will likely improve evacuation planning and execution. Training can be accomplished by organizing existing knowledge into training courses to better prepare all emergency personnel. It is not a research issue because knowledge exists to do this. It is mainly a problem of implementation and resource allocation.

6.5.3 The Technical Basis for Evacuation Planning is Inadequate

6.5.3.1 Evacuation time estimates are inaccurate

A variety of models exist to estimate the time required to evacuate specific geographical areas. The models are definitely useful in evacuation planning and are likely to provide better estimates than seat-of-the-pants guesses. How accurately they predict actual evacuation times is a valid issue. Assumptions in the models require closer scrutiny. There is a need to conduct empirical research to fine tune and validate the models to provide more accurate and certain estimates of evacuation times.

6.5.3.2 Plans will lead to unnecessary evacuation

This issue of unnecessary evacuation has been raised in connection with hurricanes. Officials will probably evacuate areas unnecessarily because the exact impact areas are uncertain. This is a policy decision. Improvements in forecasting may eventually narrow the 24-hour window currently used.

6.5.3.3 Organizations for developing plans are lacking

The issue of organizational planning has been raised regarding hazardous-material accidents at fixed sites and during transportation. While it is not true for all locations in the United States, the issue is valid for the nation overall. While recent legislation established the requirements for state and local plans, it is unclear how these regulations will be implemented. This implementation process should be tracked.

6.5.3.4 Organizations with responsibilities downplay the hazard

Anecdotal evidence does suggest that agencies responsible for dams and hazardous materials have, on occasion, downplayed the need for emergency planning. This has occurred due to politics, a desire not to deal with the issue, and a lack of mandate to resolve the problem. Again this is a policy issue. Resolution of this issue is not a research activity.

6.5.3.5 Knowledge not transferable

Some caution does need to be exercised in transferring knowledge about evacuation derived from one event to planning for other hazards. The same holds true for knowledge derived from one class of events to another. This does not mean it cannot be done. In the absence of hazard-specific knowledge, it may be possible to apply concepts but not specific instances. This, however, is certainly an issue which requires more research attention.

6.5.3.6 Dissemination of technical knowledge is poor

The quality of technical information incorporated into evacuation planning likely varies between different communities and states. The extent of this variation is known in general terms; however, it likely differs among hazard types. For example, there is much less variance in the technical knowledge in nuclear power plant evacuation plans than in the evacuation plans for hurricanes or flash floods.

6.5.3.7 Populations at risk are unknown

Evidence suggests that knowledge of populations is valuable in developing or implementing an evacuation plan. The necessary amount of detailed data to incorporate into evacuation plans is unclear. Also, a satisfactory method for periodically updating plans to include changes in population parameters is not presently known.

6.6 ISSUES CONCERNING RESPONSE CHARACTERISTICS

6.6.1 Physical Factors Constrain Evacuation

6.6.1.1 Population too dense to evacuate

Anecdotal information exists from case studies regarding the ability to evacuate some densely populated areas but does not include evacuating extremely large populations. Such evidence comes from studies of wartime evacuations, the large-scale Mississauga evacuation, or Gulf and East Coast hurricanes. Additional knowledge has come from modeling studies, but the results have been questioned because of the assumptions used. It is unclear, therefore, how long it would take to evacuate large and densely populated cities or regions, and further investigation is needed.

6.6.1.2 Population in areas with seasonal peaks

The ability to evacuate tourist populations from areas subject to nuclear power plant accidents or hurricanes is a valid issue. Questions regarding knowledge of evacuation routes, use of shelters, behavior of evacuees, timing of evacuation, or the potential problems of traffic congestion should be addressed in planning. There is not a great deal of research to support analysis of these issues. Anecdotal experience provides some information, but even good case studies are lacking. Behavioral research has not focused on studying tourists as a population, so behavioral knowledge is poor. Traffic modeling studies provide data on the length of time required to evacuate some areas and are useful within the bounds of uncertainty governing those studies. Application of general knowledge suggests that evacuation of seasonal-peak populations is probably feasible, but additional knowledge would improve planning and implementation of plans.

6.6.1.3 Boats will interfere with island evacuation

This interference caused by boats that require the raising of drawbridges is an issue of logistics in certain hurricane settings. The optimum strategy for control of drawbridges should be a problem that most local transportation planners can resolve.

6.6.1.4 Traffic accidents will constrain evacuation

There is no research to date that suggests that excessive traffic accidents are likely in an evacuation. Limited research and observation suggest that accident rates are lower during evacuations, probably because of increased driver vigilance and lower vehicle speeds. Ongoing research may provide a more definitive answer to this issue.

6.6.2 Public Behavior

6.6.2.1 People will hold parties instead

Anecdotal evidence and survey research show that people do not evacuate for a variety of reasons. One media-driven image is that of hurricane parties or similar activities during other events. Such parties do happen, but the number of people involved, while unknown, is likely small. The problem of non-evacuation does raise some other more serious issues. Such behavior frequently makes it necessary for emergency workers to rescue trapped people, often exposing themselves to risks and occasionally losing their life during rescue attempt. It is a policy decision whether to rescue people who do not evacuate. The problem concerns the potential question regarding liability of public officials for members of the public at large.

6.6.2.2 Evacuation shadow

The evacuation shadow exists by definition either spatially or demographically. A shadow is judged retrospectively and often with an arbitrary indicator of who or what area was ordered to evacuate. As such the definition ignores the social processes in disaster. Research has shown that perceived threat or risk at the time of the disaster is a central reason for persons evacuating. Research also shows that evacuation declines as perception of threat decreases and distance from the threat increases. Even if one accepts the validity of the shadow concept, it can be concluded that it has been poorly studied. Behavioral studies have either failed to include a variety of risk areas in investigations or have inadequately sampled the alleged areas of shadows. Thus what we know about spatial variation in evacuation rates and what causes the variation is rather limited; however, research on this topic will produce little added knowledge. Behavioral intent studies do little to remedy this situation.

6.6.2.3 Panic

The conditions under which panic occurs are well understood. Panic rarely occurs in evacuations, and the conditions for panic are not likely to occur, but their occurrence is not impossible. One problem is that officials and the media often mislabel certain behavior as

panic; thus, the myth is perpetuated. No further research on panic is needed unless a situation does occur in which panic takes place.

6.6.2.4 Convergence

Little research has been done on convergence, and there has been virtually no research on how convergence interferes with evacuation efforts. Studies suggest that convergence occurs in many disasters during both the pre- and post-impact periods. It poses significant problems for officials who are in charge of controlling access to evacuated areas or directing traffic. The conditions that promote convergence in certain events but not others are largely unknown The media is suspected of playing a role in stimulating convergence. Further research could provide more answers regarding mitigation of the problem.

6.6.2.5 Spontaneous evacuation

As for shadow, this concept of spontaneous evacuation exists by definition. The issuance of an official order is an arbitrary yardstick by which behavior is judged. Other types of information, including messages that an evacuation is likely or that an unofficial evacuation is recommended, will cause some people to evacuate--the reasons for such spontaneous action are more speculative. Anecdotal information suggests that the reason may be to avoid having to evacuate when officially ordered or simply to be sufficiently cautious.

6.6.2.6 Aberrant behavior

The research evidence of aberrant behavior among evacuees is practically non-existent. Hostile behavior, particularly toward emergency workers, does not occur during evacuations. Looting occurs but is extremely rare. Crime rates are believed to decrease during evacuations, and the demand for police services for non-evacuation or emergency functions decreases. Aberrant behavior is typically a myth that tends to be perpetuated by the media which covers isolated instances, misinterprets behavior, or falsely associates an unrelated incident with an emergency.

6.6.2.7 People will not use specially designated routes during evacuations

No one has specifically done a detailed investigation of the actual routes people use when evacuating. Thus it remains a major issue for traffic time estimation models. The most reasonable assumption is that people will use routes they normally use, except when the routes are blocked or when they are specifically directed by law enforcement personnel to use a different route.

6.6.2.8 Stress will occur due to evacuation

There has been no empirical research on the stress specifically experienced during evacuation as opposed to the entire emergency or disaster experience. A number of studies suggest that stress is elevated by disasters, and the levels vary among individuals and among disasters. It is unknown at what point during the warning-response-recovery sequence stress levels are elevated. There is no direct evidence that stress is dysfunctional during an evacuation. In fact, the low rate of traffic accidents provides some evidence to the contrary. Another unknown is the issue of whether stress may cause people not to evacuate. These topics are related to the broader set of issues dealing with disaster-related mental health disorders and should be placed in that perspective. Further research is needed and presents many methodological challenges.

6.6.2.9 People will not obey officials

There is considerable amount of anecdotal evidence which suggests that a very small percentage of the public will disobey official orders. Part of the problem in addressing this issue is the definition of an official order which range from recommendations to evacuate to active attempts to get people to leave designated areas. In other words, this problem is related to the strength and perceived credibility of the official orders. In high-risk situations where door-to-door orders to evacuate are issued, 98 to 99% of the population under threat will likely evacuate. In less forceful situations, the number evacuating can be substantially lower, but it may be improper in those situations to define that behavior as being disobedient.

6.6.2.10 People will not evacuate for long periods of time

Research shows that in prolonged evacuation there is a tendency for people to return or want to return as soon as possible. In some evacuations, people leave without knowing how long the evacuation will last. People do not take sufficient clothes, medicine, or other essential household items, pets that require care are left, businesses need attention, and so forth.

6.6.2.11 People do not know how to evacuate

There are some circumstances in which people do the wrong thing when evacuating because of a lack of knowledge or information. Research on this topic is mostly anecdotal. Research on the behavior of disaster victims who die in the course of evacuating is scant but suggests that some people take the wrong route because of inadequate information contained in poor warning messages.

6.6.2.12 People will shelter instead

The mix of people who continue with their normal activities, stay home, shelter, or evacuate in a crisis situation is inestimable. Behavioral intent surveys cannot be used to estimate what people will do in a threatening situation. The portion of the public that stays home, seeks shelter, or evacuates will depend on the nature of the emergency and the available information. The extent to which the situation and information resemble previously experienced events improves the public's basis for estimation. For example, in a high-threat situation, a long lead time and good warning information could result in higher compliance with recommended actions, particularly if the recommendation includes understandable, rational evacuation procedures.

6.6.2.13 People will not go to designated host areas

In most evacuations, people are usually not instructed to go to specifically designated areas. (This is different from going to assigned shelters.) When instructions are absent, research has shown that people usually choose to go to friends, relatives, or a motel when evacuating. No research has been done to infer how many people would go to a designated host area if instructed to do so by a credible source. In part, the number doing so would be determined by the information provided and the degree to which movements were controlled.

6.6.2.14 Total social chaos

There is no evidence to suggest that the social order would break down because of evacuation during a war crisis. Historical evidence runs totally to the contrary. The argument that nuclear war is unique and horrible does raise a possibility that more chaos would occur, but it is unlikely that a total breakdown of civilization would occur in the pre-impact evacuation period.

6.6.3 Emergency Worker Behavior

6.6.3.1 Role abandonment

Role abandonment has been a controversial issue for some hazards. Research suggests that total role abandonment has not been prevalent in disasters and certainly has not been dysfunctional in organizational behavior. Some people have hypothesized that role abandonment would be greater and likely problematic in a nuclear power plant accident or during a nuclear war threat. This remains somewhat speculative. Research suggests that in the former case there may be an increased potential for conflict and role strain, but emergency functions would not be threatened. In the latter case, the issue is highly uncertain. Additional research on role conflict would be confirmatory but is not of high priority.

6.6.3.2 Denial of evacuees

Host-areas' unacceptance of evacuees is an issue specific to nuclear war. It is largely speculative, and whether or not it would occur cannot be predicted. The most prudent hypothesis is that most host areas would receive evacuees, but denial could occur under certain conditions and in certain locations. Research on behavioral intentions is unlikely to help solve the ambiguity.

6.6.3.3 There will be no outside help to implement plans

Most evacuation planning assumes initial reliance on community resources with outside help over time if necessary. The resolution of this issue varies with the scenario projected. In some scenarios (e.g., the threat of a single weapon strike on a large city) it may be reasonable to assume that outside help would be available. On the other hand, an ordered evacuation of all urban areas could preclude the assumption that outside assistance would be available from within the continental United States.

6.6.3.4 Erosion of leadership

It is possible that strong leaders would not emerge in a war crisis. Based on research and experience to date, however, this is not the most likely hypothesis. Instead, it is more likely that a crisis would produce strong leadership that would extend throughout the evacuation. This is not to say conflict would not occur, particularly at local levels.

6.6.4 Evacuation is not Perceived as a Public Good

6.6.4.1 Evacuation puts people at greater risk

The act of evacuation can place people at greater risks in certain circumstances. As this report has stressed, evacuation is not, nor is it ever likely to be, a way of providing 100% protection against a hazard. Planning can minimize the extent or possibility of evacuation placing people at greater risk but only within the bounds imposed by our understanding and the predictability of hazardous systems. At present, the possibility of evacuating to higher risk areas is a constraint to the evacuation decision-making process, but it can be resolved through new research on organizational decision making.

6.6.4.2 People have right to stay

People's right to stay behind rather than to evacuate is a moral or philosophical issue that has no clear solution. On one hand, our society adheres to free choice when that choice does not damage other people or

property. On the other hand, people who do not evacuate can cause emergency workers to take greater risks (e.g., search and rescue of non-evacuees). The resolution of this dilemma is a policy question with no easy solution.

6.6.4.3 Evacuation planning creates liabilities

Evacuation does pose problems of liability. The major problem is that concern about this liability may impede effective decision making. The extent to which liability imposes other problems is basically a matter for the courts to resolve. Indications are that litigation over evacuations, along the lines raised in Chapter 2, will continue in the future and perhaps become more common than in the past.

6.7 SUMMARY

In this chapter we have considered the knowledge presented in the preceding three chapters in relation to the evacuation issues identified in Chapter 2. Table 6.2 attempts to summarize the findings on each issue with respect to four areas of concern:

1. Valid issue--based on existing knowledge, does the issue appear to be valid;

2. Knowledge adequate--is the research base adequate to understand the issue and develop means for resolving the issue;

3. Need research--would added research significantly contribute to improving the basis of evacuation policy;

4. Policy review--given existing or potential future knowledge, should policies and programs be reviewed in order to improve the implementation of evacuation plans.

Based on a review of this table, the following generalized findings can be offered. First, many of the issues identified indeed pose valid points to consider in developing a state-of-the-art evacuation plan. Other issues identified can be dismissed by planners without grave concern. Second, many issues are not fully understood or solutions for overcoming the issues cannot be confidently defined given the existing state of knowledge. Some, however, can be confidently addressed using existing knowledge. Application of existing knowledge in any event can improve evacuation planning for many hazardous situations. Third, a careful review of existing policy and procedures will aid in resolving many of the issues without conducting further research.

Table 6.2. Summary of knowledge on evacuation issues

	Valid issue	Knowledge adequate	Need research	Policy review
Physical Hazard Characteristics				
Uncertainty in ability to specify hazard parameters				
- Location, timing, magnitude, effects	Yes	No	Yes	No
- Secondary hazards	Yes	No	Yes	No
Uncertainty in ability to detect hazards				
- Scientific ability	Yes	No	Yes	No
- Lack of physical cues	No	Yes	No	No
Hazard characteristics constrain evacuation effectiveness				
- speed of onset	Yes	No	Yes	No
Planning increases the risk of hazard	No	No	No	No
Warning Characteristics				
Uncertainty in ability to alert				
- Lack of warning systems	Yes	Yes	No	Yes
- Timing of warnings	Yes	No	Yes	No
- Information withholding	No	No	No	No
- Inadequate communication	Yes	No	Yes	Yes
- Risk not revealed	Yes	Yes	No	No
- Warnings not issued to certain groups	Yes	No	Yes	Yes
- Sirens not heard	No	Yes	No	No
Information constrains evacuation				
- Special terminology	Yes	Yes	No	Yes
- Probabilistic information	Yes	No	Yes	No
- Multiple messages	Yes	Yes	No	Yes
- Inadequate content	Yes	No	Yes	Yes
- Credibility	Yes	No	Yes	No
- Frequency	Yes	Yes	No	Yes
- Siren use	Yes	Yes	No	No

Table 6.2. (continued)

	Valid issue	Knowledge adequate	Need research	Policy review
Social Issues				
Social factors color risk perceptions				
- Mitigation measures	Yes	No	No	No
- Prior experience	Yes	No	Yes	No
- Depersonalization of threat	Yes	Yes	No	Yes
- Fear of radiation	No	No	No	No
- Denial of hazard	Yes	No	Yes	No
- Denial of need for preparedness	Yes	No	Yes	Yes
- False alarms	No	No	Yes	Yes
Factors color the ability to receive warnings				
- Culture and ethnicity	Yes	Yes	No	Yes
- Disbelieve ability to detect or predict	Yes	No	No	No
- Lack understanding of risk	Yes	No	Yes	No
Factors affecting the ability to evacuate				
- Economic resources	Yes	No	No	Yes
- Special or institutional populations	Yes	No	Yes	Yes
Organizational Issues				
Planning elements are inadequate				
- Coordination of planning is lacking	Yes	No	Yes	Yes
- Inadequate planning for shelters	No	Yes	No	No
- Lack of plans	Yes	No	Yes	Yes
- Planning for secondary hazards	Yes	No	Yes	Yes
- Definition of epz	No	Yes	No	Yes
- Plans for institutional facilities and special populations	Yes	No	Yes	Yes
- Planning for reentry	Yes	No	Yes	Yes
- No support for planning	No	No	No	Yes
- Planning for emergency resources	Yes	Yes	No	No
- Planning for medical and health care	Yes	Yes	No	No
- Planning for extended evacuations	Yes	No	Yes	Yes
- Planning uses the wrong assumptions	Yes	Yes	No	Yes
Training of personnel is inadequate	Yes	Yes	No	Yes

Table 6.2. (continued)

	Valid issue	Knowledge adequate	Need research	Policy review
The technical basis for planning is inadequate				
- Time estimates are inaccurate	Yes	No	Yes	No
- Plans will lead to unnecessary evacuation	No	Yes	No	Yes
- Organizations for developing plans are lacking	Yes	Yes	No	Yes
- Organizations downplay the hazard	Yes	Yes	No	Yes
- Knowledge not transferrable	Yes	No	Yes	No
- Dissemination of knowledge is poor	Yes	Yes	No	Yes
- Population at risk unknown	Yes	Yes	No	Yes
Response Issues				
Physical factors constrain evacuation				
- Population is too dense to evacuate	Yes	No	Yes	No
- Population in areas with seasonal peaks	Yes	No	Yes	No
- Boats interfere with island evacuation	No	Yes	No	Yes
- Traffic accidents constrain evacuation	No	Yes	No	No
Public behavior				
- People will hold parties instead	No	Yes	No	Yes
- Evacuation shadow	No	Yes	No	No
- Panic	No	Yes	No	No
- Convergence	Yes	No	Yes	Yes
- Spontaneous evacuation	No	Yes	No	No
- Aberrant behavior	No	Yes	No	No
- People wont use special routes	No	Yes	Yes	Yes
- Stress will occur due to evacuation	Yes	No	Yes	No
- People won't obey officials	No	Yes	No	No
- People won't evacuate for long periods	Yes	No	No	Yes
- People don't know how to evacuate	Yes	No	No	Yes
- People will shelter instead	Yes	Yes	No	Yes
- People will not go to designated areas	Yes	No	Yes	Yes
- Total social chaos	No	Yes	No	No

Table 6.2. (continued)

	Valid issue	Knowledge adequate	Need research	Policy review
Emergency worker behavior				
- Role abandonment	Yes	Yes	Yes	No
- Denial of evacuees	No	Yes	No	No
- Erosion of leadership	No	Yes	No	No
- No outside support	No	Yes	No	Yes
Evacuation not perceived as a public good				
- Evacuation puts people at greater risk	No	No	Yes	Yes
- People have right to stay	Yes	Yes	No	Yes
- Evacuations create liabilities	Yes	Yes	No	Yes

7. RESEARCH NEEDS

We do not recommend initiation of a single research project for each of the issues judged to need more research--to do so would be redundant and certainly not cost-effective. Instead, we have tried to define a set of studies, each addressing multiple issues. These studies are far from exclusive and, in fact, would benefit from some coordination between related projects. Because they address multiple issues, it is difficult to assign priorities; however, the conclusions address the relative importance of this research agenda. In total, we identify ten research efforts to help resolve problematic evacuation issues.

7.1 PLANNING FOR LARGE-SCALE EVACUATIONS

Planning guidance for evacuating large urban areas is limited by scant relevant past experience and the absence of research conducted from an evacuation planning perspective. Largely experience with large-scale evacuations has been limited to population movement in response to warnings of hurricanes and tropical cyclones. Creative and carefully constructed research is needed to enhance evacuation planning efforts for large populations. Past evacuation studies and experience must be utilized in developing guidance, but care must be taken in applying knowledge gained from experience with successful small-scale evacuations. The initial research agenda for this planning problem should emphasize an inductive approach rather than the deductive approach more commonly applied to developing planning guidance.

This research should first identify the widely-accepted concepts in the evacuation literature and, then, evaluate them with respect to their efficacy for large populations. In this review, the existing transportation planning guide for evacuating large cities and studies of larger pre-hurricane evacuations would be the focus of attention. Having established "confidence levels" for this information base, relevant planning concepts (for which there is little or no supportive research) must be subjected to a grounded-model-building exercise. This exercise should focus on the full utilization of seasoned expertise in two or three large urbanized areas. A concerted effort to build on existing emergency planning should be made, so it is likely that existing projects, such as the SCEPP project in southern California, and the Dade County planning effort, should be used to further the model-building effort.

A major method that could be used to build the model could be similar to a series of table-top emergency exercises. The themes should be focused to identify and solve the problems unique to large-population evacuation. Questions of public information needs, uses of organized volunteers, and unique logistical needs should be examined and remodelled to point to solutions and important unanswered questions.

A planning guide for large-scale evacuations will be the major product from the effort. But a secondary product is likely to be a research plan by which to identify further solutions and subsequent guidelines.

7.2 SPECIAL EVACUATION PLANNING NEEDS FOR FAST-MOVING EVENTS

Research should provide answers to several questions to increase the knowledge base for planning for evacuations because of fast-moving events. These questions fall into the categories of public response to emergency information and warnings and the organizational processes tying disaster detection to public evacuation advisements and warnings.

Relatively little is known about special planning needs associated with special pre-emergency public education regarding the need for a quick response when fast-moving events leave short times available for taking protective actions such as evacuation. The State of Hawaii, for example, has begun efforts to educate residents of Hilo. These people are being instructed to evacuate to high ground within five minutes after they feel an earthquake to avoid the threat of earthquake-generated tsunamis. California has recently become concerned about the possibility of having only a 90-second warning for an 8.3-Richter-magnitude earthquake in the southern part of the state. Additionally, hazardous material and chemical accidents pose increasing threats for initiating fast-moving events. The limited research available on the type, character, and effectiveness of pre-emergency public education for future fast-moving hazardous events is far from conclusive; yet research evidence and historical cases definitely indicate that the knowledge people bring to an emergency does effect their response. Cross hazard research is needed to determine useful topics to address in pre-emergency education aimed at fast-moving events, and to decide how to assemble and present that information to the public.

Fast-moving events pose another public response question. We know relatively little about the unique needs for actual emergency public warnings and information for fast-moving events. For example, it has long been known that most people will seek confirmation of warnings before deciding to evacuate. Because some emergencies are so fast moving, this confirmation process can lead to increased losses. Research is also needed which focuses on the social psychological aspects of emergency public information for fast-moving events. Hopefully, this research would produce findings that would enable endangered publics to make quicker evacuation decisions in response to fast-moving events.

Research on pre-emergency public education and on special emergency warning and information needs should be cross-hazard and should include natural phenomena, such as flash floods, as well as technological events, such as chemical spills resulting from train derailments. Additionally, this research should seek cross-hazard similarities (generic principles of emergency planning for fast-moving events), as well as unique hazard-specific findings. In the latter cases, particular attention should be

paid to how pre-emergency education and disaster warnings and information could help people choose alternative protective actions in lieu of evacuation where appropriate. For example, some chemical emergencies would not cost lives if it were known that people could simply cover their nose and mouth with a wet rag and stay indoors.

Fast-moving events, and effective public response to them, require that the hazard be detected quickly and that the public be informed rapidly. Three constraints may inhibit this process. Research is needed on how to overcome these constraints and streamline the processes that link hazard detection to public warnings.

The first of these constraints deals with the "hardware" aspects of a public alert. Research should address alternative schemes for alerting an endangered public: sirens, telephone systems, and the like.

The second constraint involves the processing of hazard information by people and organizations prior to issuing public warnings and information. Retrospective studies of recent historical events and research on events as they occur would help reduce the time needed to process risk information for fast-moving events before it is made public.

Finally, technical research is needed for some hazards to determine the actual risks of public exposure. This information must exist before planning can proceed.

7.3 EVACUATION PLANNING FOR CONCURRENT HAZARDOUS EVENTS

A three-pronged research effort is in order to address existing gaps in knowledge to provide a more informed basis for evacuation planning for concurrent hazardous events. These efforts follow.

First, physical science cross-hazard studies could identify the hazards' probabilities of occurring concurrently (e.g., fire and earthquake), considering both linked hazards (one causes another) and independent hazards (both occurring at the same time). This ranking would provide an informed basis for deciding which concurrent events should be planned for and which would be best ignored. This effort need be neither elaborate, time-consuming, nor expensive. A systematic assessment performed by an integrated team of experts would seem to be appropriate.

Second, it would be appropriate for emergency planning and behavioral response experts to jointly produce a systematic catalogue of planning needs for those concurrent hazards previously judged to be worthy of further planning. This catalogue of planning needs should detail generic issues, if any, as well as unique issues peculiar to particular and unique sets of concurrent hazards.

Finally, based on the prior planning assessment, prototype plans should be developed in some localities that can be transferred to others. This action-"research" component has already been shown to be effective

with the increased adoption of new planning issues with earthquake and earthquake prediction planning.

This three-step research process (physical science--emergency planning and social science--plan development) is sequential, it is easily based on existing knowledge which is neither well assembled nor integrated for the purpose of concurrent hazards planning, and it promises payoff.

7.4 HUMAN BEHAVIOR IN EVACUATIONS

The research needed would certainly take advantage of the knowledge already accumulated by individual warning systems research projects and would go several methodological, theoretical, and practical steps further. In order to address the problems stated, an integrated warning systems research effort should accomplish the following:

1. begin with the state-of-the-art factors that comprise warning system structure and direct human response;

2. evaluate these same factors across a wide range of geological, technological, and climatological emergencies to provide a sound basis for cross-hazard comparability;

3. provide for cross-hazard emergency comparisons in order to determine common themes--applicable in all warning systems--and hazard-specific factors; and

4. allow research to be performed almost immediately after an emergency before warning response data become too old.

The purposes of cross-hazard comparisons in this research should be

1. to determine common warning system elements for all hazards, for example, hardware and technologies, emergency organization, warning messages;

2. to address what common warning system elements can be used to reduce duplication of warning systems in the United States and integrate cross-hazard warning systems;

3. to suggest the common warning-system elements that would likely survive in emergencies not yet experienced, and draft a basis for warning system preparedness for those emergencies; and

4. to reveal hazard-specific elements of warning systems needed for use in preparedness for the full-range of potential hazards.

Finally, based on the findings of the comparison of emergency cross-hazards warning events studies, an assessment and cost-benefit analysis of existing warning systems in the nation should suggest alternative

fruitful paths for cross-hazard integration of warning systems design and technology.

7.5 ACCURACY OF EVACUATION TIME ESTIMATES

An integrated model for evacuation time estimates, based on clear assumptions and validated on the basis of actual data, is needed. Such a model could be tailored to different hazards, localities, and circumstances. Research to generate such a model would best be interdisciplinary and should involve traffic modelers, social scientists, and others. It should also be cross-hazards in character, and should address the range of problems that could affect evacuation time estimates (e.g., seasonal tourist populations, snow, other concurrent events, and so on). Three steps for this research are in order.

First, a thorough assessment should identify all models in use, the assumptions on which they are based, and the aspects of all hazards and circumstances that could affect evacuation time estimates. Second, empirical research should test the validity of all articulated and inarticulated model assumptions, using data sets from historical evacuations as well as gathered original data. For example, traffic data could be collected in actual evacuations as they occur. These data could then be compared to modelling estimates of the same evacuation. Finally, the results of the preliminary assessment could be combined with the empirical research on model assumptions to create a validated model/planning guide that would be adaptable across hazards and circumstances.

7.6 RE-ENTRY AFTER EVACUATION

The problems associated with re-entry after evacuation are not well known and have received little research attention. It is difficult, therefore, to say with confidence how they might be managed or how they might best be addressed as part of evacuation planning. We do know, however, that re-entry can be riddled with problems; recently, cases have occurred where evacuees have returned home before impact, for example.

Research on re-entry could be relatively straight-forward and could have high potential payoff. Two approaches are in order. First, research studies already performed should be systematically reviewed and data reanalyzed for anecdotes and evidence already in the hands of the research community. Most research performed to date on evacuation has focused on movement out of the area at risk. Researchers may have overlooked re-entry anecdotes since re-entry was likely not a research focus. Second, retrospective studies of recent cross-hazard evacuation events should be done. If selected carefully, evacuation managers and organizational respondents could be interviewed about re-entry problems in a dozen or so recent evacuations. Additionally, several surveys of recent evacuees should be performed to obtain better data on their behavior and to ascertain the problems they experienced.

7.7 PLANNING NEEDS FOR SPECIAL POPULATIONS

Evidence from past disasters has already indicated that evacuating institutionalized populations is a special planning problem. Research to improve planning for this problem area has begun and has led to the identification of other sub-populations needing specific planning attention, for example, tourists or non-institutionalized disabled persons.

To date, data from the various past and ongoing studies on this topic have not been reviewed and synthesized or published in such a way as to give visibility to the research on broader planning applications. Consequently, beneficial findings have been under-utilized for cross-population and cross-hazard planning. The next step on planning needs for special populations is to systematically review existing information to identify common findings and compare them in the context of available literature. This step could be readily accomplished by contacting the relevant researchers and agencies and soliciting their cooperation in providing insights, data, and written materials for systematic examination.

Examination of past experience and studies would provide three products. First, a synthesis of current knowledge would be reported. Second, those common findings supported by the existing literature, could be identified, translated, and suitably formatted into planning guidelines for immediate use by evacuation planners nationwide. The third product would be a detailed and prioritized research agenda. The agenda could derive from data gaps and topical exclusion of important features of the evacuation planning models currently known and accepted in the available literature.

7.8 LIABILITY FOR EVACUATION DECISIONS

Concerns and perceptions of liability for evacuation decision making, regardless of whether or not those concerns are founded, are frequently articulated by emergency managers. It has not, as yet, been documented if such concerns act to constrain actual evacuation decision making. If liability perceptions do constrain good evacuation decisions, research should also address how best to remove those constraints. Two studies are in order to address this issue, the first is behavioral in character, while the second is legal.

Evacuation decision makers who have participated in a broad range of natural and technological evacuation events should be interviewed concerning recent evacuation events. The focus would be on evacuation decision making, and the study would address, for example, the decisions that were made, when, and why. However, the decision makers should also be asked about factors that probably influenced their decisions, including liability. If this study included carefully worded questions, liability perceptions could be assessed without bias. The product from this study should be an estimate of the extent to which perceived liabilities affect

actual evacuation decision making, and if so, how and under what circumstances.

A legal study of actual liabilities over a range of evacuation decision making scenarios is also warranted. Such an effort should seek to determine, within practical limits and over a range of circumstances, the degree to which there are and are not grounds for liability associated with evacuation decision making.

The aim of both studies should be directed toward defining ways to remove liability or liability perceptions that could interfere with making good evacuation decisions.

7.9 UNCERTAINTIES IN EVACUATION DECISION MAKING

Uncertainties regarding decisions that lead to public evacuation advisements do and will continue to, affect all decision making in the organizations that are involved. Two research efforts are needed to help minimize the effects of these uncertainties. The first effort should identify these uncertainties and determine how they operate to detract from sound decision making. The second effort should center on evacuation decision-making aids in an attempt to remove the negative effects of uncertainties and to assist in making decisions.

It would be appropriate to proceed with several case studies of natural and technological events that focus squarely on inter- and intraorganizational decision making that could lead to evacuation. These studies should seek to systematically document the uncertainties that affect decision making at each point--from the detection of a hazard through the actual evacuation decisions. Additionally, the research should address the cause of any uncertainties that arose and what, if anything, could have helped reduce the negative effects of such uncertainties. The soundness of this research would depend on investigations beginning as soon as possible after, if not during, an evacuation.

Additionally, the role of decision making aids in evacuations should be investigated. Several studies appear promising. First, laboratory studies should research, in a comparative way, how various available decision-making models and aids might lead to different or similar evacuation decisions under different scenarios. The results of this research should enable the fine-tuning of good models and aids, as well as the abandonment of the less useful ones.

Second, the adoption of the models and aids should be investigated across localities engaged in evacuation decision making. An adoption-diffusion/transfer study could do much to enhance the use of good models and aids. Such a study would be particularly useful, for example, in hurricane decision making, since recent developments have led to the availability of new and good models.

Finally, research should be performed to identify the kind of information, aids, and models that could best assist decision-makers. This research should be from the point of view of the decision-maker or "user" (e.g., if decision-makers who have recent evacuation experience feel that "real-time" traffic data would be useful, how would a system best be designed for their use). Decision-makers who had recent evacuation experience in a variety of hazards would be surveyed.

7.10 ADOPTION OF INTEGRATED EMERGENCY MANAGEMENT SYSTEMS

That certain concepts are common to successful emergency planning for evacuations has been recognized and widely accepted. This commonality has been codified by the federal government through FEMA's efforts to encourage state and local officials to adopt an integrated cross-hazard approach to emergency planning and evacuation. This planning approach facilitates systematic information transfer of more detailed planning aids to state and local emergency officials.

To date, this integrated planning approach has been unevenly adopted at the state and local levels. However, that uneven adoption and, more importantly, the reasons behind it are not analytically documented. To enhance upgraded emergency and evacuation planning and to reduce disaster impacts across the nation, a study of this uneven application and the reasons for it is now needed. Findings from such research will, in turn, be used by emergency planning officials to broaden and upgrade utilization of the integrated planning approach and supplemental guidance.

The first step in the study should identify state emergency planning entities that use both the integrated planning approach and supplemental guidance. These entities should be selected to maximize two characteristic differences: (a) state and local use of the integrated planning approach, and (b) state and local use of supplemental guidance. An updated literature review should reveal the incentives and constraints to state and local policy adoption. Then, informed interviews with relevant officials in the sample states should identify the reasons leading to adoption of integrated planning and the constraints which have been encountered. Based on the literature and the interviews, the main reasons for differential adoption would be identified, and specific measures of the adoption of integrated planning and the reasons leading to adoption would be developed.

The developed measures would then be applied in both state and local jurisdictions to identify and document the reasons for differential adoption. Specific programs for technical assistance and information transfers could then be developed to advance the current status of uneven use of the integrated approach.

7.11 CURRENT MEANS OF IMPROVING PLANNING

Several steps can be taken to improve existing evacuation planning other than the development of new knowledge. The most significant improvement could be to adopt a systematic method for developing a plan, such as the process described in the hurricane program (Chapter 2). This method involves (1) identifying the nature of threats and their geographical distribution; (2) estimating the time available (i.e., from the time of detection of the hazard until the time when evacuation is not feasible); (3) calculating the time required to evacuate; and (4) developing guidelines to implement an evacuation, based on those estimates and other relevant data. The full details of this process are outlined in Chapter 2. This development method, however, can be implemented as a relatively simple procedure or a fairly complex one depending on the seriousness of the threat and available resources or expertise. Even if it is a simple effort, the benefits still can be significant because, simply by planning, officials will better understand the decision-making process.

The second step to improve the effectiveness of evacuation planning is to advance the application of existing knowledge of state-of-the-art hazard warning and emergency communication systems. Failure to notify the public-at-risk or to provide good information often causes poor or problematic evacuations. Considerable knowledge exists regarding the design of good warning systems, but it has not been systematically applied in the development of plans and operating procedures. Better warnings have had a dramatic impact on reducing fatalities from hurricanes; further improvements are still possible, and much could be done for a number of other hazards to increase citizen compliance with protective action recommendations, including evacuation.

Third, evacuation plans can be improved by upgrading the treatment of special or institutional populations. Although the technical basis for evacuating special populations still needs improvement, identifying the means and resources needed to evacuate institutions in high-risk areas is certainly feasible. This identification of special needs is often done after problems or near misses have been experienced. In addition, developing mechanisms for more effective communication with minority or other populations (who may be reluctant to evacuate) is also possible but is usually ignored. Such improvements can be made but are often not politically salient.

Finally, the development of more effective organizations to implement evacuation plans and make evacuation decisions is feasible at all levels of government. In many cases, this development can be done with little or no expenditure of additional resources, but it may involve redirecting planning efforts. However, this redirection will involve the development of new planning guidance and training materials to incorporate existing knowledge of organizational effectiveness in planning and emergency response.

7.12 CONCLUSIONS

Some issues concerning evacuation planning remain unresolved. The fact is that people who could have evacuated safely continue to die in disasters. The program of research identified in this report and better application of existing knowledge will contribute to reducing the potential losses from all disasters. Although issues regarding evacuation may be resolved, it should be noted that without the accompanying political accommodations there is little hope for implementation of policies. Taking this uncertainty into account and assuming that some planning will be better than ad hoc responses (considering anticipated increases in population density and in the number of threats and/or hazards), we identify four key areas of immediate attention.

Perhaps the most overriding issue concerns "the definition of the evacuation problem," including recognition of relevant hazards, interfaces between evacuation planning organizations, and the politicizing of planning. As noted previously, many of the current issues regard threats only recently defined as problems, thus requiring some immediate policy decisions. It takes time to adjust policies, but there may not be enough time when an earthquake is predicted, another volcano in the Cascades threatens to erupt, or a terrorist attack occurs at a major airport. The scientific community relies on evidence and caution which require time that may not be available. In certain other instances, local planners may not be informed about potential threats. For example, the military has specific, but possibly outdated, evacuation plans to cope with threats that may be neither reported to nor coordinated with local communities or officials. Furthermore, other agencies, such as the Red Cross, may have outdated plans to deal with today's range of evacuation threats such as hazardous material accidents. Thus, in many cases, there is little or no consensus on defining a problem or on deciding how agencies should deal with a problem.

Effective planning and decision making can be more problematic when organizational boundaries are crossed, particularly those lines of authority between local, state, and federal agencies. Should a federal agency necessarily oversee local matters when local officials may have greater awareness of needs and problems? This controversy has shown up in multiple emergencies--the need for generators to supply water following Mt. St. Helen's eruption, the problems of issuing reentry passes at perimeters of evacuated areas, the control of guardsmen duties, and so forth. How can flexibility be built into evacuation plans to consider multi-organizational participation? On the other hand, should political stances (e.g., opposition to nuclear power) be allowed to preclude safety measures (e.g., the implementation of evacuation plans for local communities at risk)? Opposition, as a political stance, may create greater hazards, in fact, some measures will always be opposed. There should be some consensus regarding contentions about the definition of the problem and its various solutions so that questions can be resolved without the constraint of "do nothing at all." Should a generic plan be the alternative for communities that refuse, as a political gesture, to institute plans? Support for such a generic plan could come from the acknowledge-

ment that public officials are responsible for public safety. As we move into the future, there will be more people at greater risk, an increasing number of hazards, and greater population heterogeneity. New solutions to defining the problems appear to be critically needed to implement general safety measures, such as evacuation plans for the public at large.

The second critical issue in evacuation planning concerns the physical characteristics of a hazard. Of those defined, the timing of events is the most important since it determines to whom, to what, and where the impacts occur. Both ends of the temporal spectrum must be examined. Future advances in technology may improve forecasting but the problems of short-time warning and rapid evacuation will remain. Furthermore, those hazards that can generate other hazards that could require protective actions other than evacuation have not been fully recognized by emergency planners. Again timing creates other problems if the event has a long time window. For example, the issues of convergence and restrictions that would keep the public returning to evacuated areas that may appear to be safe continue to pose problems for emergency officials.

Seasonal variations in the timing of an evacuation may create problems. An event that occurs during the height of the tourist season creates far greater demands on emergency planners than would an evacuation of the local populace only. Who pays the costs for evacuation of transients and tourists who may have additional needs because they are without normal kinship bonds and away from home?

In other situations, the ambiguity of the timing of an event impacts decision makers who do not want to evacuate unnecessarily. Still, advance notice affects the number of people who can be warned and evacuated successfully, as well the extent to which property can be protected. In addition, more advance notice is required to move special populations. It has been shown that people frequently hesitate for a variety of reasons before evacuating. The ability to successfully stage an evacuation is highly dependent on the good timing of decision making and information dissemination.

The third key issue concerns the impact that equity and the distribution of resources might have on evacuation decision-making. Who decides and how is it determined if warnings to evacuate are given in several languages; if special instructions are provide to people who are not supposed to be in the vicinity; or if added resources are used to evacuate institutional or special populations? How is it determined who or what areas get warned? How are resources allocated for evacuation planning when it is perceived they are not needed? Who sets such budget priorities? In earthquake planning, if people live in unsafe structures and cannot afford to move, who provides for them? These and other value judgements constrain or make evacuation planning difficult.

The fourth issue concerns providing effective information flows to the public. Much is known about information flows, but evacuation experience continues to illustrate problems with information processes. For example, it has been demonstrated that information to support an

evacuation should be consistent for greatest effectiveness. How do officials keep information factual when media personnel are actively seeking competing or different viewpoints or independently interpreting data, thus potentially misinforming the public? How can the media be encouraged not to sensationalize an event? How can technical information be relayed effectively to the public when the media assumes the roles of information interpretation and gatekeeping? What mix of information about an event maximizes adaptive evacuation behaviors? This area requires further clarification to overcome ambiguous evidence derived from a varied set of past research efforts.

Despite these concerns, it can be concluded that, over the past decade, evacuation planning has become more sophisticated and advanced. Progress has been made in at least four major ways. First, evacuation planning for some hazards has integrated physical risk studies with quantitative evacuation traffic modeling and behavioral research to produce comprehensive planning guidance. The best examples of this approach are found in hurricane evacuation planning and nuclear power plant evacuation planning. For the former, extensive modeling of hurricane storm surge defines the maximum levels of water inundation. Vulnerability studies identify populations at risk, and behavioral studies are used to estimate evacuation departures and destination. By using vulnerability and behavioral data combined with a quantitative evacuation time estimate, local emergency planners can decide when they must make an evacuation decision and which areas to evacuate. This type of approach is less well developed for other hazards, although FEMA is moving in the direction of initiating similar programs for some other hazard types.

Second, the adoption of an integrated or generic emergency management approach has and will further bolster the expediency of evacuation planning. Given the integrated scientific approach being pursued, integrated planning will eliminate many overlapping planning tasks among hazard types. Furthermore, integration will encourage more flexible emergency evacuation capabilities that will apply to most conceivable contingencies.

Third, over the past 10 years, most aspects of evacuation logistics have been defined and researched and, as a result, are well understood. Withstanding the issues raised in the subsequent section, the knowledge of how to move small of fairly large numbers of people is fairly well developed. This does not mean this knowledge has been implemented or adopted in all evacuation plans, or that some hazard-specific uncertainties have been eliminated. Overall, however, we know the resource requirements for evacuating most populations from threatened areas in a reasonable amount of time.

Finally, there are indications that the local implementation of evacuation procedures has improved. Each year thousands of people are successfully evacuated from floods and hazardous material accidents. Evacuation rates from high-risk coastal areas preceding hurricanes are very high, and deaths from hurricane surge have been significantly reduced. Many specific success stories could be cited.

The success stories, however, must be balanced with the problems identified earlier. Evacuation planning, as well as other forms of emergency planning, is an ongoing and evolving process. The extent to which existing knowledge can be incorporated into planning and to which new research can resolve remaining issues and constraints will determine how rapidly that evolution occurs.

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APPENDIX A

CODING FORM

DRAFT

SAMPLE CODING SHEET

Authors

Year published

Title

Journal; publisher; etc. | Journal Vol. and No.

Location (if applicable) | Pages or Chapter

Remarks:

ABSTRACT:

Key findings:

(1)

(2)

(3)

(4)

CODING:

Study characteristics:
- Type of data collection:
- Sampling unit:
- Level of analysis:
- Number of incidents that provoke response:
- Number of geographic areas/time periods:
- Evacuation topics emphasized:
- Policy recommendations? Supported?

APPENDIX B

SUMMARY OF EVACUATION ISSUES BY APPLICABLE HAZARD TYPE

APPENDIX B

SUMMARY OF EVACUATION ISSUES BY APPLICABLE HAZARD TYPE

We have summarized the applicability of each issue to each specific hazard. This is based on evidence collected as part of task four. It is quite possible that some issues also apply to other hazards and are not reported here.

Hazard key:

hur - hurricane, eq - earthquake, tsu - tsunami, fld - flood, tor - tornado, vol - volcano, dam - dam failure, npp - nuclear power plant accident, fshm - fixed site hazardous material accident, thm - transportation hazardous materials accident, crs - crisis situation

Physical Hazard Characteristics

Uncertainty in ability to specify hazard parameters.

- Location - hur, eq, tsu, fld, tor, vol, npp, fshm, thm, crs
- Timing - hur, eq, vol
- Magnitude - eq, fld, vol, npp, fshm, thm, crs
- Effects - npp
- Secondary Hazards - hur, eq, vol

Uncertainty in ability to detect hazards.

- Scientific ability - tsu, dam, fshm, thm
- Lack of physical cues - npp

Hazard Characteristics constrain evacuation effectiveness.

- speed of onset - eq, fld, tsu, vol, fshm, thm, crs

Planning Increases the threat or risk of hazard.

- planning increases the likelihood of an event - npp, crs

Warning Characteristics

Uncertainty in ability to alert.

- Lack of warning systems - eq, dam, fshm, thm
- Timing of warnings - fld, tsu, npp fshm, thm
- Information withholding - eq, npp, fshm
- Inadequate communication - fld, npp, fshm, thm
- Risk not revealed - npp, fshm, thm

- Warnings not issued to certain groups - hur, fld, npp
- Sirens not heard - tsu, npp, fshm

Information constrains evacuation.

- Special terminology - hur, tor, npp
- Probabilistic information - hur, eq
- Multiple messages - hur, eq, vol
- Inadequate content - fld, npp, crs
- Credibility - npp, crs
- Frequency - hur
- Siren use - tsu, npp, fshm

Social Issues

Social factors color risk perceptions.

- Mitigation measures - hur, dam
- Prior experience - hur, tor
- Depersonalization of threat - eq
- Fear of radiation - npp
- Denial of hazard - fld, fshm
- Denial of need for preparedness - crs
- False alarms - hur, eq, tsu, tor, npp, crs

Factors color the ability to receive warnings.

- Culture and ethnicity - eq
- Disbelieve ability to detect or predict - eq, crs
- Lack understanding of risk - fld, hur, tsu, vol

Factors affecting the ability to evacuate.

- Economic resources - eq
- Special or institutional populations - hur, npp, crs

Organizational Issues

Planning Elements are inadequate.

- Coordination of planning is lacking - hur, eq, fshm, crs
- Inadequate planning for shelters - hur, npp fshm, thm, crs
- Lack of plans - eq, fld, tor, dam, npp, sdhm, thm, crs
- Planning for secondary hazards - hur, fld, vol, npp
- Definition of emergency planning zones (epz) - npp
- Plans for institutional facilities and special populations - hur, eq, npp, fshm, crs
- Planning for reentry - hur, npp, crs
- No support for planning - hur, npp, crs
- Planning for emergency resources to support evacuees - crs
- Planning for medical and health care of evacuees - crs

- Planning for extended evacuations - crs
- Planning uses the wrong assumptions - crs

Training of evacuation personnel is inadequate. - npp, thm

The technical basis for evacuation planning is inadequate.

- Evacuation time estimates are inaccurate - hur, npp, crs
- Plans will lead to unnecessary evacuation - hur
- Organizations for developing plans are lacking - fshm, thm
- Organizations with responsibilities downplay the hazard - eq, dam
- Knowledge not transferrable - npp, crs
- Dissemination of technical knowledge is poor - all
- Population at risk is unknown - thm

Response Issues

Physical factors constrain evacuation.

- Population is too dense to evacuate - hur, eq, npp, crs
- Population in areas with seasonal peaks - hur, npp
- Boats will interfere with island evacuation - hur
- Traffic accidents will constrain evacuation - hur, npp, crs

Public behavior.

- People will hold parties instead - hur, eq, fld
- Evacuation shadow - eq, npp
- Panic - eq, npp, crs
- Convergence - fld, tsu, vol, thm
- Spontaneous evacuation - npp, crs
- Aberrant behavior - npp, crs
- People won't use specially designated routes - npp
- Stress will occur due to evacuation - npp, fshm, crs
- People won't obey officials - npp, crs
- People wont evacuate for long periods of time - vol, crs
- People don't know how to evacuate - eq, fld, tor, npp, thm
- People will shelter instead - crs
- People will not go to designated host areas - crs
- Total social chaos - crs

Emergency worker behavior.

- Role abandonment - npp, crs
- Denial of evacuees - crs
- Erosion of leadership - crs
- No outside support - crs

Evacuation not perceived as a public good.

- Evacuation puts people at greater risk - hur, npp, fshm, crs
- People have right to stay - hur, vol
- Evacuations create liabilities - all

APPENDIX C

SUMMARY OF BEHAVIORAL DATA ON EVACUATION

Table C.1. Data sources for behavioral surveys on evacuation

Event	Source
Denver Flood	Drabek and Stephenson, 1971
Big Thompson Flood	Gruntfest, 1977
Westville Flood	Perry and Mushkatel, 1984
Sumner Flood	Perry et al., 1981
Valley Flood	Perry et al., 1981
Fillmore Flood	Perry et al., 1981
Snoqualmie Flood	Perry et al., 1981
Rapid City Flood	Mileti and Beck, 1975
Mt. St. Helens Volcano	Perry and Greene, 1983
Atlanta Flood	Leik et al., 1981
Boise Flood	Leik et al., 1981
Wheeling Flood	Leik et al., 1981
Sedona Flood	Leik et al., 1981
Clarksburg Flood	Leik et al., 1981
Rochester Flood	Leik et al., 1981
Hurricane Eloise	Windham et al., 1977
Hurricane Eloise	Baker et al., 1976
Hurricane Camille	Wilkenson and Ross, 1972
Hurricane David	Leik et al., 1981
Hurricane Frederick	Leik et al., 1981
Hurricane Carla	Moore et al., 1964
Mississauga Chemical Accident	Burton, 1981
Railsville Chemical Accident	Perry and Mushkatel, 1984

Table C.2. Warning and evacuation rates

Event	Percent of respondents	
	Warned	Evacuated
Quick Response		
Big Thompson flood	30	32
Westville flood	100	35
Sumner flood	86	48
Valley flood	98	39
Fillmore flood	72	48
Snoqualmie flood	98	37
Mt. St. Helens eruption	93	-
Atlanta flood	81	7
Boise flood	42	0
Wheeling flood	73	0
Sendona flood	63	24
Clarksburg flood	89	21
Rochester flood	38	48
Mississauga	100	98
Extended response		
Hurricane David	97	38
Hurricane Frederick	98	34
Hurricane Carla	-	65
Mt. St. Helens ashfall	98	NA

Table C.3. Source of first warning

Event	Source of warning	Percent warned
Big Thompson flood	Sheriff	45
	Friend	20
	Stranger	20
	Police Dispatch	15
	Telephone	52
	Loudspeaker	4
	Face to face	21
	Siren	5
Denver flood	Authorities	19
	Friend, etc.	28
	Mass media	52
Combined flash floods*	Authorities	49
	Friends, etc.	33
	Mass media	5
	Environmental cues	14
Mt. St. Helens (ash)	Personal	52
	Radio	34
	Television	12
Mt. St. Helens (mudflow)	Personal	37
	Emergencies authorities	46
	Mass media	10
	Cues	6
Mississauga	Personal	11
	Media	44
	Police	43

*Source: Perry et al., 1981.

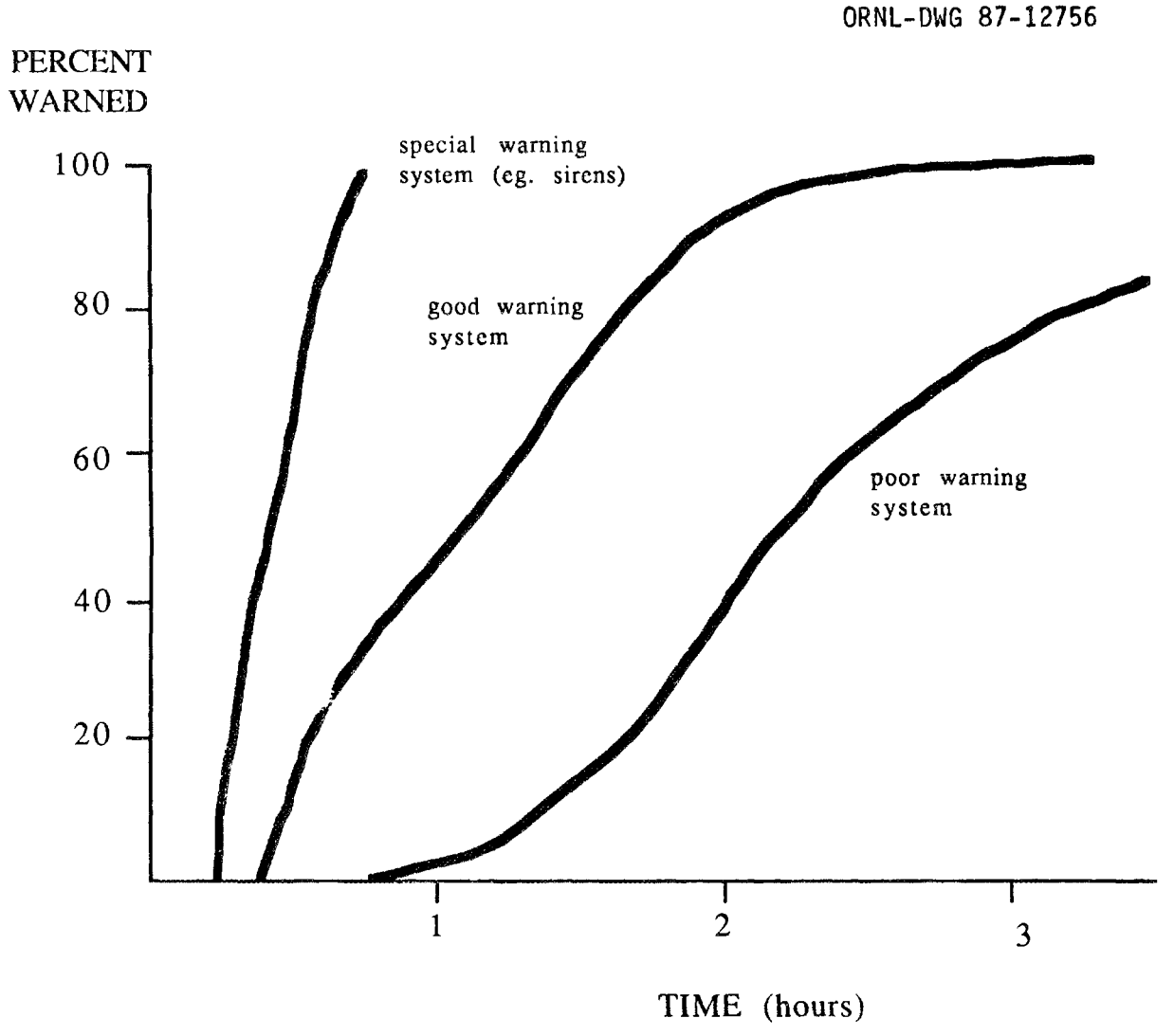

Figure C-1. Warning times given different systems.

ORNL-DWG 87-12757

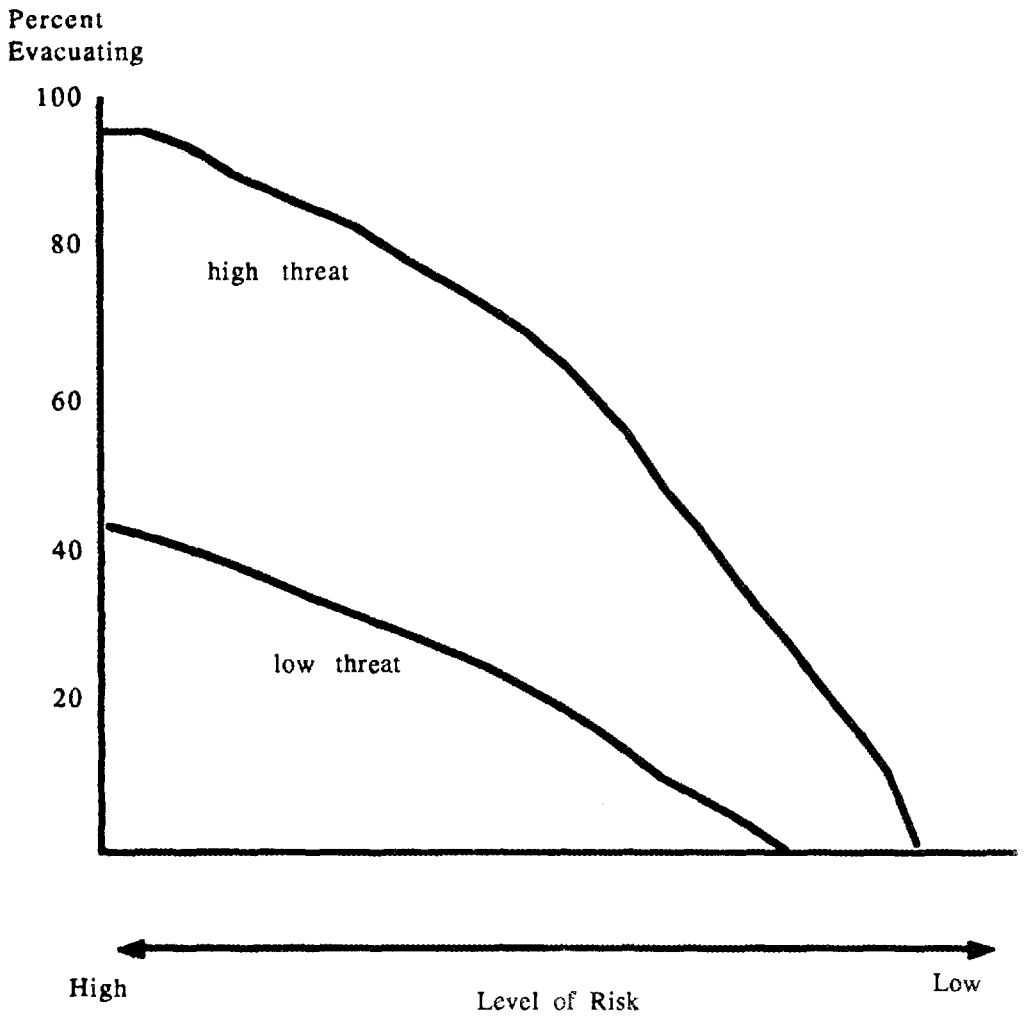

Figure C-2. Generalized relationship between risk and evaluation.

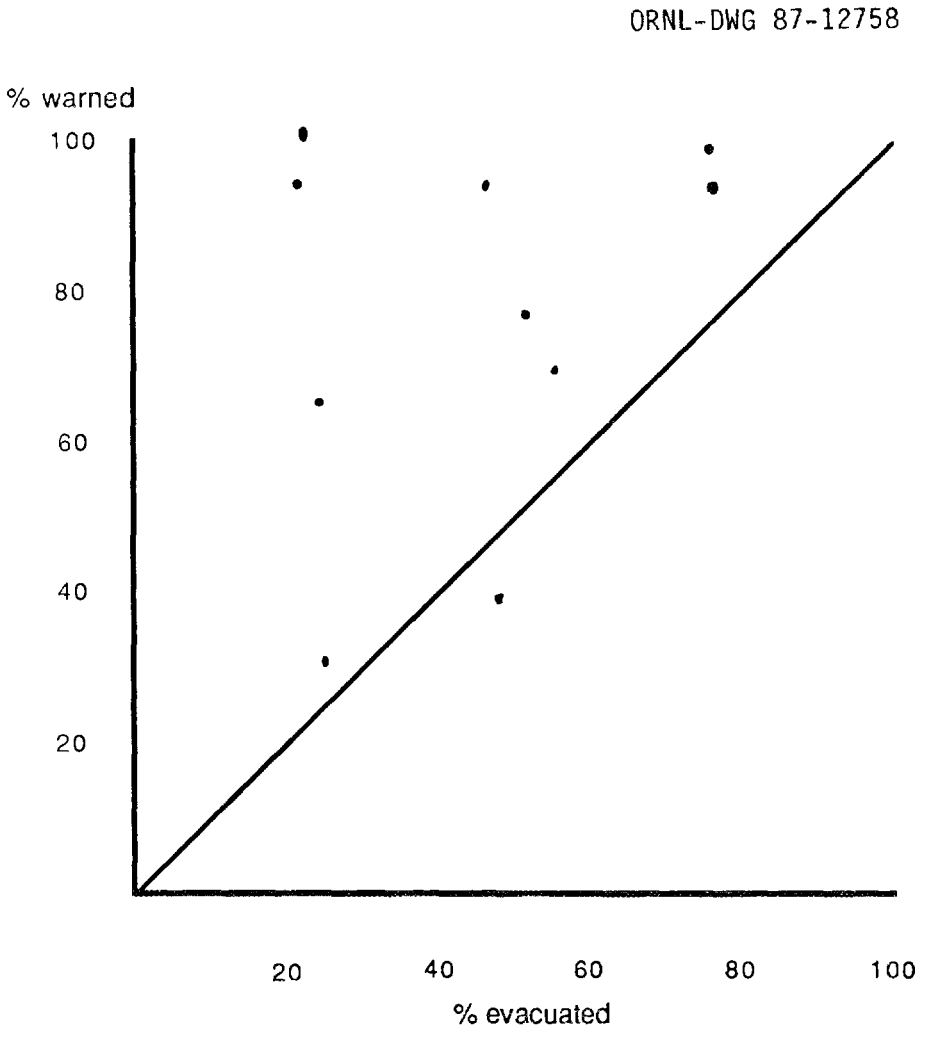

Figure C-3. Warning versus evacuation rates.

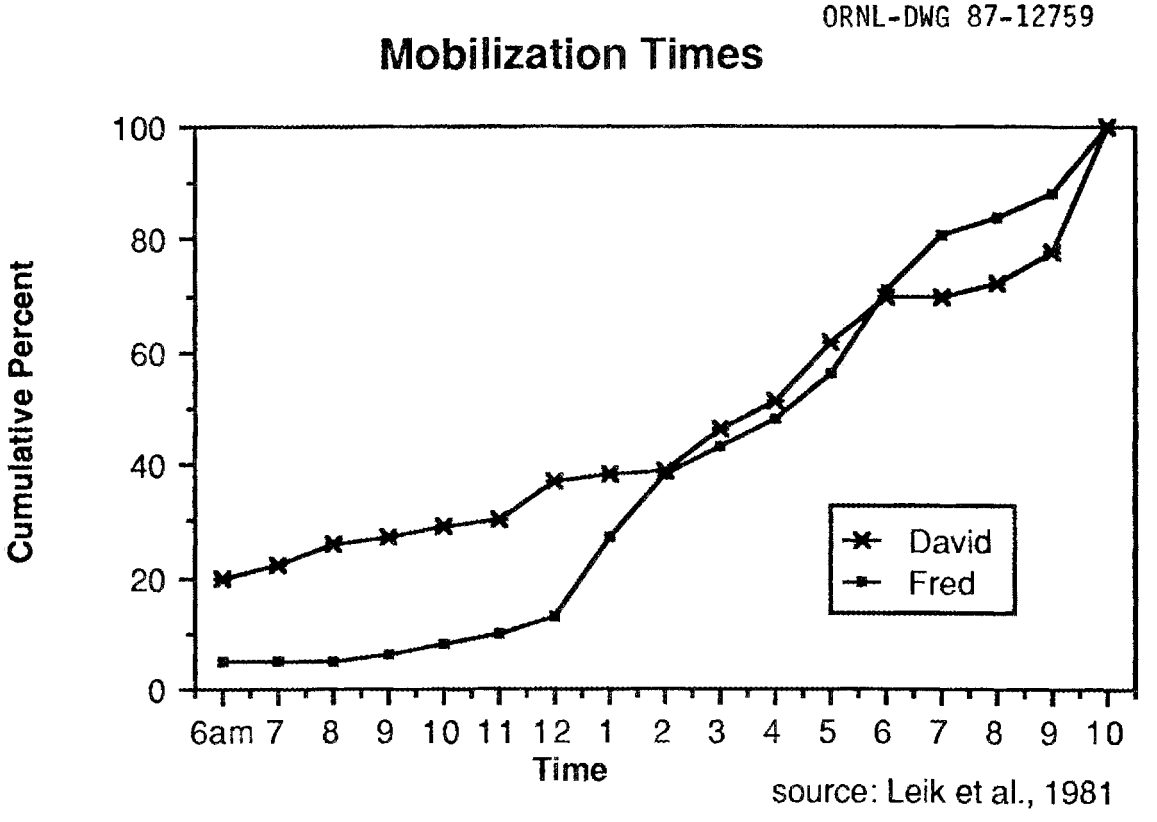

Figure C-4. Evacuation departure times for two hurricanes.

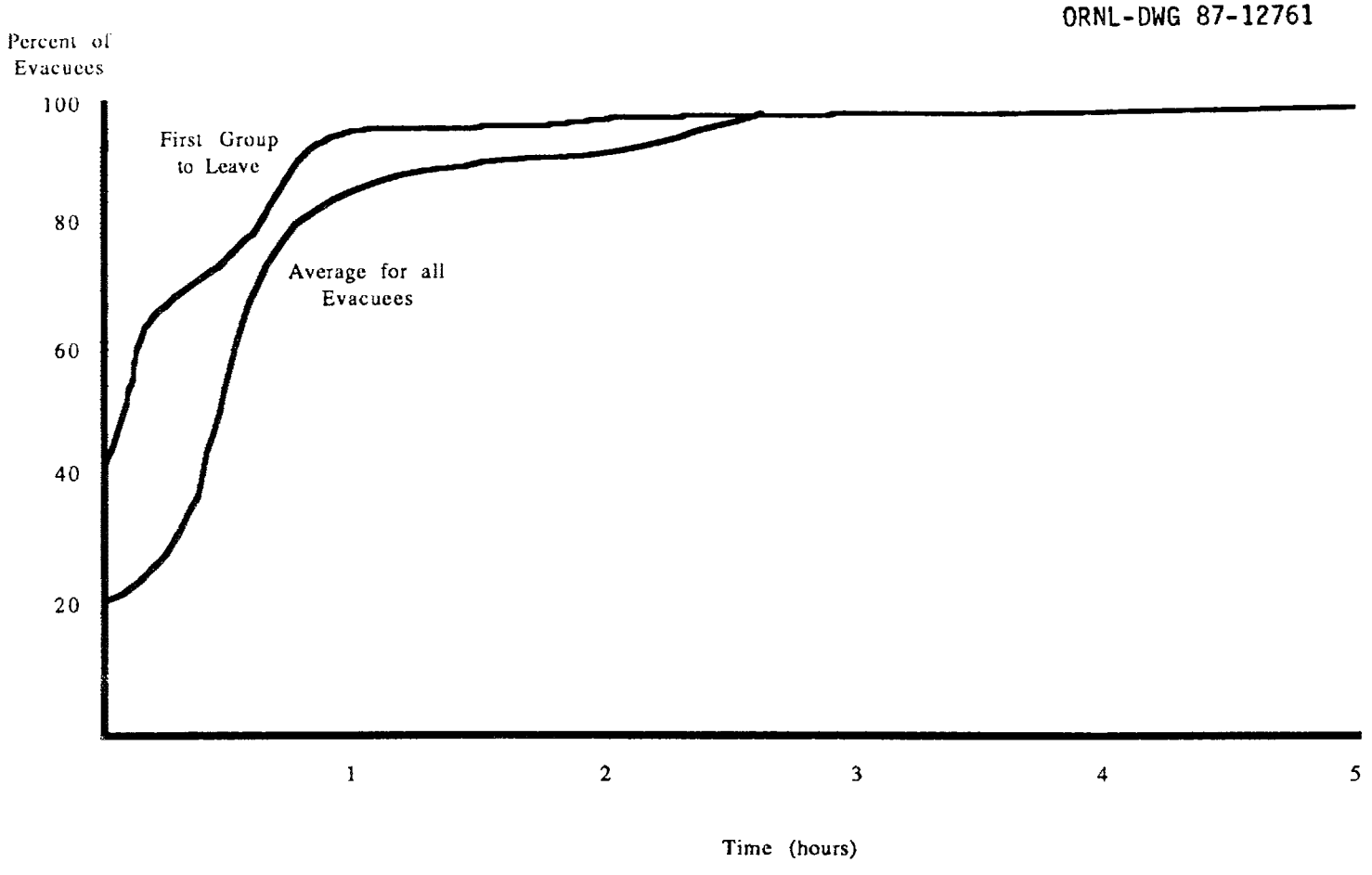

Figure C-5. Mobilization times at Mississauga. Source: Burton, 1981.

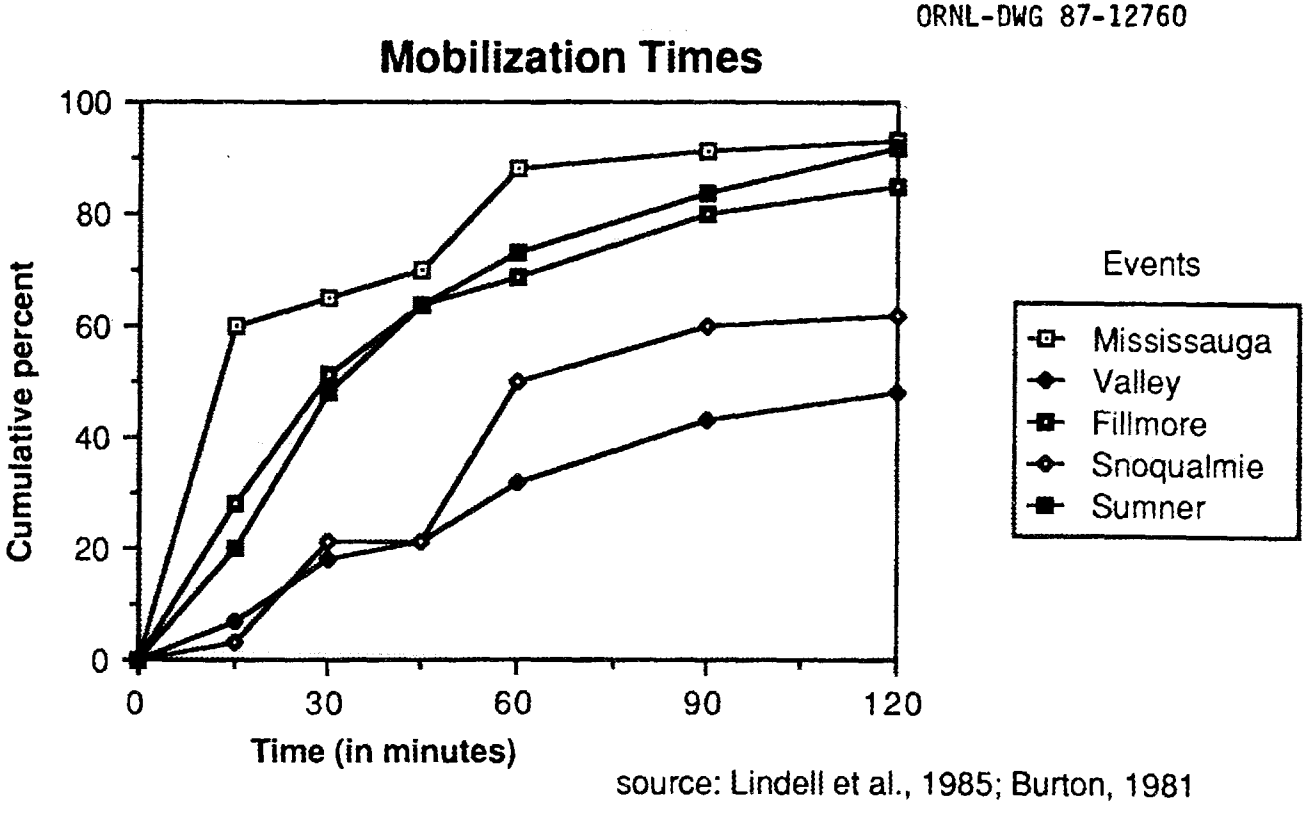

Figure C-6. Mobilization times in five floods.

EVACUATION: AN ASSESSMENT OF PLANNING AND RESEARCH

Unclassified
June 1987
216 pages

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Ft. Collins, Colorado 80523
Interagency Agreement: FEMA No. EMW-84-E-1737; DOE No. 40-1457-84

The purpose of this research was to assess issues and criticisms of evacuation planning for all hazards under an integrated emergency management concept and to review research that addresses those issues. The work identifies gaps in knowledge about evacuation planning issues and research that can address these gaps. Over the past decade, evacuation planning has become more sophisticated and advanced. The adoption of an integrated or generic emergency management approach has bolstered the expediency of evacuation planning. Most aspects of evacuation logistics have been defined and researched and, as a result, are well understood. The local implementation of evacuation procedures has improved, but could be further improved with a better application of existing knowledge. Some issues concerning evacuation planning still remain unresolved.

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Characteristics of structures that burned in the 2018 Camp Fire

Bill Gabbert October 11, 2021 Uncategorized

Wildfire, Firefighting, home ignition zone, research

The blaze in Northern California destroyed 18,804 structures, most of which were in Paradise

Aerial image showing a portion of Magalia, just NW of Paradise, illustrating a gradient of fire effects on structures ranging from unburned to destroyed. Most of the destroyed homes (in the center) are surrounded by unburned vegetation, which is typical of the ember wash pattern of surviving vegetation influenced the outcome in these areas. Photo Credits, Dave Cook, Insurance Research Institute.

In a paper published October 4, 2021, researchers analyzed the structures that were destroyed and those that survived the Camp Fire that ran through the city of Paradise on November 8, 2018. They considered at least four primary characteristics of structures:

- Were they built before or after the adoption in 2008 of Chapter 7A of the California Building Code (CBC) which contains fire resistive measures including exterior construction materials used for roof coverings, vents, decking, eaves, and walls, as well as requirements for residential and commercial buildings in designated fire hazard severity zones.
- Distance to nearest wildland vegetation
- Number of structures destroyed within 100 meters.
- Fire-fire exposure by measuring the distance between structures.

They found that the last three criteria were the strongest predictors of survival. Homes more than 18 meters from a destroyed structure and with less than 33 percent of the perimeter exposed to other burning structures survived at a substantially higher rate than homes in closer proximity to a destroyed structure or across a wider footprint of burning structures. Due to changes in surviving homes approved to result from radiant heat from nearby burning structures, the researchers found no significant effect of most home combustible materials. The researchers concluded that building and vegetation modifications are possible that would substantially improve outcomes. Among the most common and significant problems in recently burned areas are homes with nonburning structures, treatment of wildland fuels, and eliminating near-home combustibles, especially within 1.5 meters of the structure.

The authors noted that while it includes requirements not found in many building codes, a few others are more complex incorporating multiple construction classes based on the distance to the wildland fuel, and three exposure levels. For example Chapter 7A does not consider the interaction between components such as siding, windows, and the under-eave area on an exterior wall.

There is an opportunity for much needed improvement in both current building codes and how we live in wildland-urban interface (WUI) areas.

Below is the complete Conclusion section from the research.

Conclusions

The results of this study support the idea that both preventions to firefighting and ignition resistant construction are effective in reducing losses to wildfire. Denser developments, built to the highest standards, may protect individuals against direct flame impingement and radiant heat at vegetation fire, but densely becomes a detriment once buildings ignite and burn.

Recent examples of losses in areas of higher density housing include the wind-driven 2017 Tubbs Fire in northern California, where house-to-house spread was limited to 80 m (262 ft) and the 2019/20 Black Summer fires in Australia (Ashley and Bradstock 2021), and the most often structures, many in denser areas in the towns of Talmet and Phoenix (Cohen and Stratmann 2020). Once fire becomes an urban wildfire protection is mostly limited to firefighters because especially important because occupied structures contain significant quantities of fuel, produce substantial heat when burned, and are a source of additional embers. For density to be protective, home and other structure ignitions would need to be low.

Fifty-six percent of homes in Paradise built during or after 2008 did not survive, illustrating that much improvement is needed in both current building codes and how we live in wildland areas. Many ignitions were caused by structures becomes a benefit rather than a vulnerability. The threat posed by burning structures to adjacent homes is a function of the geometry and influence of vegetation 30+ out from the home—a distance that in most circumstances would be difficult to prevent. Improvements in the ignition resistance of structures to the overall ability of homes and communities to resist wildfire exposure.

To maximize survivability, homes need to be designed and maintained to minimize the chance of a direct flame contact, resist ember ignition, and to survive extended radiant heat exposure. Our analysis demonstrates that the strong influence of nearby burning structures on home survival suggests improvements to vegetation and fuel management may be incomplete in the California Building Code—i.e., increasing the standards for buildings within a certain minimum distance of other structures.

Some possible improvements might include noncombustible siding with rating underneath, fully protected vents, double-pane windows, and decking consisting of tempered glass, or installation of deployable non-combustible exterior shutters. Additional research is needed to determine which CBC's are better for resisting radiant heat and flame contact exposures and could minimize the necessity of other components. Whereas the International Code Council's Wildland Urban Interface Building Code (International Code Council 2021) provided three ignition-resistant construction classes to allow for material restrictions as a function of exposure level, Chapter 7A consists of one level, so it bears to matter in the building either needs to comply, or it does not. The Australian building code for construction in bushfire prone areas, AS 3959 (Standards Australia 2018), has four construction classes based on anticipated radiant heat, flame, and ember exposure levels. Interaction between components, for example, siding, windows, and the under-eave area on an exterior wall, is not considered.

Our summary of damaged but not destroyed homes in Paradise was in line with other reports which found the importance of home ignition sources likely resulting from embers (Steil et al. 2019). Embers frequently ignited near-home combustibles such as wooden fences, wooden and vegetative mulch beds, flames and/or associated radiant heat then impacting the home itself, supporting awareness of the importance of combustibles within the first 1.5 m (5 ft) of the building or home exterior.

A re-interpretation of defensible space fuel modifications is needed to increase the building's resistance and exposure to embers and direct flame contact, particularly in the area of the home within 5 feet (1.5 meters) of the home deck or steps. This does not diminish the value of defensible space fuel modifications in the 5 to 100 feet (1.5 to 30 meters) from the home, but only reduces fuel continuity and the probability of direct flame contact to the home, but also provides firefighters a defensible space.

While our data show a relationship between home loss and vegetative fuels (high pre-fire continuity canopy cover) likely associated with a greater litter and woody fuel abundance, as well as other wildland understory vegetation) that can contribute to fire intensity and ember generation, the WUI fire loss issue has been described as home ignition more so than a wildland fuels problem (Cohen 2000; Calkin et al. 2014). The damaged home data seen in line with this view, with few homes showing evidence of continuous wildfire wildland fuels that would contribute to flame impingement, but numerous homes with near-home fuels, both from manmade and natural sources, that led to direct or indirect ember ignitions.

Our data suggest it is possible to build (and maintain) buildings that have a high probability of surviving a worst-case scenario type of wildfire, even in fire-prone landscapes such as the Paradise area. Some homes did survive in areas where the nearest burning structure was >30 m away, and fuels associated with vegetation 30+ out from the home kept at moderate and lower levels (<40 canopy cover) had a 64% survival rate—an approximately 3-fold improvement over the Paradise housing population as a whole. Survival appeared substantially higher still on particularly possible if all components of risk, including ignition sources, were addressed with single-family home *survival in the 2018 Camp Fire, California, fire and 45, (2) (2021).*

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5 thoughts on “Characteristics of structures that burned in the 2018 Camp Fire”

OLDGUY
October 11, 2021 at 8:44 pm

Once again, the TARGET is/are County Supervisors who approve of such expansion into the WUI and of their feed settings with strict protection ordinances.

Reply

#mostlysmokey
October 11, 2021 at 7:12 pm

EXACTLY

Some of those folks MIGHT listen….often not as evidenced by the last 70+ yrs and current FIREWISE push. Much more than the ignition components…. it needs more action with legislation with teeth by local communities with county fire fathers and sisters with more than normal intestinal fortitude to push it into law….otherwise, status quo….

Reply

Old Captain
October 11, 2021 at 10:58 pm

A few years ago, a friend of mine purchased a home in Pollock Pines. After he took ownership he asked me to come up and share suggestions. My first suggestion was that he not have purchased the place without talking to someone who had an understanding of fire. His property was on a steep slope with fire across of nothing but heavy brush on a ten-some per cent slope. The driveway was up the side of the slope to the flat at the brush. There was heavy brush within six feet of the septic side of the house, a wood deck on the downslope side, wood clad, log cab eye enchanting the house, and a steep and narrow driveway to get into the property. There was also no water source for structure protection. He went into a “shock the messenger” mode when I told him that he had very serious problems and that it was going to cost him a small fortune to address them. I also told him that even if he did fix the major issues mentioned, he was going to be using to loose his home just because of where and how it was built and the fact that no one was going to put an engine in there and risk it and it’s crew to try to protect a structure that was not a viable proposition. Fortunately, he kept the place only about a year and got out. To his home was a classic example of why there should be very strong and restrictive building codes in the WUI. This was one more example of weak enforcement, poor building code enforcement, and very poor neighborhood planning. Before this property was put on the market and sold a fire risk analysis should have been conducted and a disclosure prepared by buyers. That analysis should have also contained information as to what would be needed to make the buildings and property even minimally safe from an encroaching fire.

Reply

#mostlysmokey
October 12, 2021 at 9:21 pm

Sounds like too much common sense

Reply

David I. Kauffman
October 12, 2021 at 1:42 pm

my uncles home burned in the camp fire,it was nineteen feet,it was beautiful beauty wooded,wood shake roofing,absolutely no clear space,none,the house was built in the 1950s and added on to numerous times,as far a my dad and i could tell,these upgrades were never permitted or inspected,he was 98 when he passed away,i had to help,there are cousin,took the house over,and just barely made it out,was struck in that big traffic jam,her husband passed away that day,and from the fire hot from a block away,i had to drive down the walmart parking lot in Chico,locked up at the same spot,and slumped over the steering wheel,he was in his 70s,same age as my mom ,and was in good health,but he couldnt take the fire.

Reply

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Date:	Monday, July 25, 2022 5:10:52 PM
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Knapp et al. Fire Ecology (2021) 17:25
https://doi.org/10.1186/s42408-021-00117-0

Fire Ecology

ORIGINAL RESEARCH Open Access

Housing arrangement and vegetation factors associated with single-family home survival in the 2018 Camp Fire, California

Eric E. Knapp[1*], Yana S. Valachovic[2], Stephen L. Quarles[3] and Nels G. Johnson[4]

Abstract

Background: The 2018 Camp Fire, which destroyed 18,804 structures in northern California, including most of the town of Paradise, provided an opportunity to investigate housing arrangement and vegetation-related factors associated with home loss and determine whether California's 2008 adoption of exterior building codes for homes located in the wildland-urban-interface (WUI) improved survival. We randomly sampled single-family homes constructed: before 1997, 1997 to 2007, and 2008 to 2018, the latter two time periods being before and after changes to the building code. We then quantified the nearby pre-fire overstory canopy cover and the distance to the nearest destroyed home and structure from aerial imagery. Using post-fire photographs, we also assessed fire damage and assigned a cause for damaged but not destroyed homes.

Results: Homes built prior to 1997 fared poorly, with only 11.5% surviving, compared with 38.5% survival for homes built in 1997 and after. The difference in survival percentage for homes built immediately before and after the adoption of Chapter 7A in the California Building Code (37% and 44%, respectively) was not statistically significant. Distance to nearest destroyed structure, number of structures destroyed within 100 m, and pre-fire overstory canopy cover within 100 m of the home were the strongest predictors of survival, but significant interactions with the construction time period suggested that factors contributing to survival differed for homes of different ages. Homes >18 m from a destroyed structure and in areas with pre-fire overstory canopy cover within 30–100 m of the home of <53% survived at a substantially higher rate than homes in closer proximity to a destroyed structure or in areas with higher pre-fire overstory canopy cover. Most fire damage to surviving homes appeared to result from radiant heat from nearby burning structures or flame impingement from the ignition of near-home combustible materials.

Conclusions: Strong associations between both distance to nearest destroyed structure and vegetation within 100 m and home survival in the Camp Fire indicate building and vegetation modifications are possible that would substantially improve outcomes. Among those include improvements to windows and siding in closest proximity to neighboring structures, treatment of wildland fuels, and eliminating near-home combustibles, especially in areas closest to the home (0–1.5 m).

Keywords: Building codes, Defensible space, Flame impingement, Fuels, Radiant heat, Structure loss, Wildfire, Wildland-urban interface

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Resumen

Antecedentes: El incendio de Camp Fire, el cual destruyó 18.804 estructuras en el norte de California, incluido la mayor parte del pueblo de Paradise, proveyó una oportunidad de investigar la ubicación de las casas y factores vegetales asociados con la pérdida de hogares, y determinar si la adopción de los códigos de construcción de California de 2008 para el exterior de las viviendas ubicadas en las áreas de interfaz urbano rural, mejoraban su supervivencia. Muestreamos al azar casas individuales construidas antes de 1997, de 1997 a 2007, y de 2008 a 2018, las últimas por dos períodos, anterior y posterior a los cambios en los códigos de construcción. Luego cuantificamos los doseles de la vegetación aledaña y la distancia a la vivienda y estructura más cercana destruidas por el fuego usando imágenes satelitales. Usando fotografías post-fuego, también determinamos el daño por fuego y asignamos una causa de daño, pero no casas destruidas.

Resultados: Las casas construidas antes de 1997 se desempeñaron pobremente, con solo un 11,5% de supervivencia, comparado con un 38,5% de supervivencia de aquellas construidas en 1997 y a posteriori. La diferencia en el porcentaje de supervivencia para las casas construidas antes y después de la adopción del Capítulo 7A del código de Construcción de California (37% y 44%, respectivamente), no fue estadísticamente significativa. La distancia a la estructura más cercana destruida por el fuego, el número de estructuras destruidas dentro de los 100 m, y la cobertura del dosel vegetal previo al fuego fueron los predictores de supervivencia más importantes, aunque las interacciones más significativas con el período de construcción sugieren que los factores que contribuyeron a la supervivencia difirieron para casas de diferentes edades. Las casas distantes > 18 m de una estructura destruida y en áreas con cobertura de vegetación previa dentro de los 20-100 m de esa casa < 53% sobrevivió a tasas superiores que aquellas en proximidad de una estructura destruida o en áreas con mayor cobertura vegetal pre-fuego. La mayoría de los daños a las casas supervivientes parece resultar del calor radiante de las estructuras quemadas próximas o por el impacto de las llamas de igniciones de materiales combustibles cercanos a las casas.

Conclusiones: Las fuertes asociaciones entre la distancia de la estructura destruida más cercana y la vegetación dentro de los 100 m y la supervivencia de las casas en el incendio de Camp Fire indican que es posible que las modificaciones en las construcciones y en la estructura de la vegetación mejoren los resultados en relación a su supervivencia. Entre ellos se incluye el mejoramiento de las ventanas y paredes en la proximidad de estructuras vecinas, el tratamiento de los combustibles vegetales, y la eliminación de combustibles cercanos, especialmente en áreas muy cercanas a las casas (entre 0 y 1,5 m).

Background

California, like many other regions having a Mediterranean climate, is set up to burn. Cool, wet winters, which promote vegetation growth, are followed by long, hot, nearly rain-free summers during which these wildland fuels are primed for combustion (Sugihara et al. 2018). In forested areas such as the northern Sierra Nevada, where the town of Paradise is located, wildfires ignited by indigenous peoples and lightning were historically frequent (mean fire return interval of mostly <15 years) (Van de Water and Safford 2011) and integral to shaping vegetation composition and structure (Leiberg 1902; Sugihara et al. 2018). The historical fire return interval in shrub-dominated chaparral vegetation was somewhat longer—15 to 90 years (Van de Water and Safford 2011). While overall acres burned in wildfires today is still substantially less than what burned historically (Stephens et al. 2007), both acres burned and associated losses to infrastructure have been increasing in recent times with 15 of the 20 most destructive events in modern California history, based on the number of structures destroyed, occurring since 2014 *(see California Fire Statistics:* https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf*)*.

The increase in destructive wildfire events has been linked to changes in fire frequency, development patterns, and climate. Loss of indigenous burning and active fire suppression over the past 150 or more years following Euro-American expansion into California reduced the incidence of fire in many forested areas. Where fire historically burned most frequently, surface and vegetative fuels have increased, often leading to more severe fire when it does burn (Steel et al. 2015). Such fires are also frequently more intense because fire suppression has effectively eliminated much of the lower intensity burning under more benign weather conditions. When landscapes now experience fire, most often it is when wildfire escapes initial attack under worst-case scenario weather conditions (Calkin et al. 2014). In addition, over the last several decades, warmer temperatures and longer fire seasons (Westerling et al. 2006) have increased fuel volatility and the probability of ignitions coinciding with extreme weather conditions. In other areas such as

chaparral ecosystems in southern California, fire suppression has had less influence on the fire regime—fire frequency has increased in some areas on account of numerous human ignitions, but stand-replacing fire was and still is the norm (Conard and Weise 1998). Further complicating the wildfire challenges, human populations have increased nearly ten-fold over the last 150 years, with a substantial proportion of houses built within or among wildland vegetation (Radeloff et al. 2018). Partly due to the effectiveness of fire suppression, most of these homes were not built or maintained with the goal of being able to withstand wildfire in the absence of fire suppression resources. In addition, home design or construction codes and standards to enhance a building's exterior resistance to wildfire are relatively recent (International Code Council 2003), with substantial development having occurred prior.

Post-wildfire analyses provide an opportunity to investigate why some houses survive and learn how to better co-exist with wildfire in fire-prone environments. During wildfire, buildings can be subjected to three different wildfire exposures—wind-blown embers, radiant heat, and direct flame contact (Caton et al. 2017). Embers are produced when vegetation ignites and burns (Koo et al. 2010). In large, fast-moving wildfires burning under extreme conditions, embers can be transported several kilometers or more (Koo et al. 2010) and ignite buildings directly or indirectly (Caton et al. 2017). A direct ember ignition includes embers igniting decking or siding by accumulating on or next to the material or penetrating vents or open windows and entering the building (Quarles et al. 2010; Hakes et al. 2017). In contrast, indirect ignitions occur when embers ignite combustible materials such as vegetation, bark mulch, leaf litter, neighboring buildings, or near-home objects such as stored materials, decks, or wood fences (Quarles et al. 2010; Hakes et al. 2017). Indirect ignition scenarios ultimately result in radiant heat and/or flame contact to the home or building. Direct flame contact and extended radiant heat exposures can ignite siding and other exterior-use construction materials or break glass in windows. Radiant heat exposure often occurs when a neighboring structure ignites. The dominant mechanism of home loss in numerous particularly destructive wildfires has been described as initial direct or indirect ember ignitions, with burning homes then leading to house-to-house fire spread (Murphy et al. 2007; Cohen and Stratton 2008). However, the potential influence of housing density on structure losses in wildfires has varied, with some studies finding a greater probability of loss at higher housing densities (Price and Bradstock 2013; Penman et al. 2019), while other studies have reported a greater risk at lower housing densities (Syphard et al. 2012, 2014, 2017). Amount of near-home combustible vegetation has also been linked to the probability of home loss in wildfires (Price and Bradstock 2013; Syphard et al. 2014; Penman et al. 2019).

California leads the USA in having a building code with the objective of limiting the impact of wildfires on the built environment. In the 1960s, the state began requiring homeowners to implement defensible space fuel modifications, initially within the first 9 m (30 ft) of a building, but since expanded to 30 m (100 ft) (https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=4291.&lawCode=PRC). Work on standardized test methods to evaluate exterior-use construction materials for fire performance began in the late 1990s and later incorporated into Chapter 7A, an addition to the California Building Code which was adopted in 2008. Chapter 7A provides prescriptive and performance-based options for exterior construction materials used for roof coverings, vents, exterior walls, and decks (https://codes.iccsafe.org/content/CBC2019P4/chapter-7a-sfm-materials-and-construction-methods-for-exterior-wildfire-exposure) and applies to new construction of residential and commercial buildings in designated fire hazard severity zones. In some jurisdictions, provisions of Chapter 7A also apply to "significant remodels" of existing buildings. The 2018 Camp Fire, which destroyed much of Paradise, California, provided an opportunity to evaluate the performance of buildings constructed after the adoption of Chapter 7A and explore factors associated with home survival.

The Camp Fire started on the morning of November 8, 2018, with the failure of an electrical transmission line and spread rapidly through wildland fuels comprised of mixed conifer forest, brush, grass, and dead and down surface fuels (Maranghides et al. 2021). Surface fuels were unusually dry due to persistently low relative humidity throughout the summer and fall and the late onset of fall rains (Brewer and Clements 2019). Driven by strong NE winds, the fast-moving fire quickly reached the towns of Concow, Paradise, and Magalia and became the most destructive wildfire in California history. At least 85 people were killed and 18,804 structures were destroyed. A high proportion of the home and business losses occurred in Paradise—the largest town within the fire footprint. The fire passed from one side of Paradise to the other during one burn period over less than 12 h (Maranghides et al. 2021). With the focus on saving people's lives, very few homes were subject to firefighting efforts, and survival was therefore largely a function of characteristics of the home and surrounding environment. Previous similar analyses have typically combined data across multiple fires and years, with an unknown extent of defensive intervention.

While conditions as the Camp Fire burned through Paradise were still highly variable, the massive home loss in a single burn period presents an opportunity to investigate factors with potentially lesser confounding by differences in geography, weather, and defensive action by firefighters or civilians.

The objective of this research was to answer three questions as follows: (1) did proximity to nearby burning structures factor into the probability of home survival, (2) did fuels associated with nearby vegetation factor into the probability of home survival, and (3) was the full adoption in 2008 of Chapter 7A into the California Building Code associated with improved odds of home survival?

Methods

The Butte County Assessor's database, dated June 1, 2018, was used to extract 11,515 parcels within the Paradise city limits (Fig. 1). Parcels were sorted by use code and 7949 single-family dwellings were selected, after discarding 89 without a listed build year. Mobile homes, businesses, and other non-single-family structures were excluded. We then linked Damage Inspection (DINS) data, obtained from CAL FIRE, to parcel number to ascertain damage sustained in the Camp Fire and whether the building was destroyed, partially damaged, or had no impact from the Camp Fire. We lumped homes classified as "damaged" into the "survived" category, because in most instances, the damage, based on photos included with the DINS data, was minor—e.g., cracked windows, bubbled exterior paint, or melted vinyl gutters and window frames, with the structure itself intact.

Sample population

For our analyses, we randomly selected 400 single-family dwellings in Paradise, stratified by three time periods (Fig. 1): time 1 = homes built before 1997, while time 2 (homes built from 1997 to 2007) and time 3 (homes built from 2008 to 2018) represented the two 11-year periods on either side of the 2008 adoption of Chapter 7A in the California Building Code. If the changes to the building code improved home survival, survival percentage in time 3 should be significantly higher than survival in time 2, especially after adjusting for any potentially confounding variables. The stratification was done to ensure a large enough sample size in time period 3. Two hundred homes (out of 7288) were randomly selected in time 1, one hundred homes (out of 519) were selected in time 2, and 100 homes (out of 142) were selected in time 3 (Fig. 1). More homes were selected during time 1 because such a low percentage (13%) of older (pre-1997) homes survived. Of the population of homes that were randomly selected by the construction period, 24 of the surviving homes were noted as damaged in the DINS report, the rest undamaged. Damage was listed as "affected (1–9%)" for 23 of the damaged homes and "minor (10–25%)" for one.

Variables

For each randomly selected home, we used Google Earth to measure the distance from the edge of the home (as defined by edge of the roof, using pre-fire images when destroyed) to the closest edge of the nearest home and nearest structure, as well as the nearest home and nearest structure that burned. "Nearest structure" was in most cases another single-family home, but also

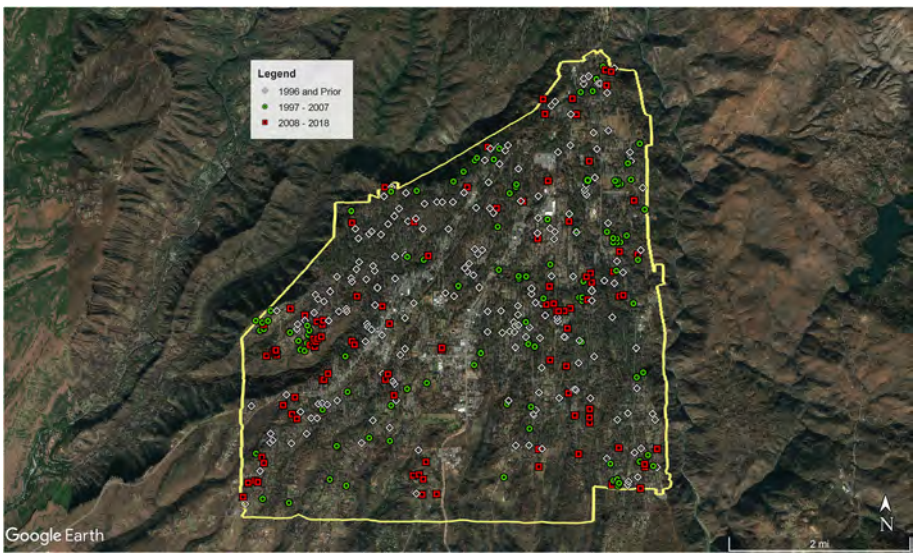

Fig. 1 Map showing the perimeter of Paradise, California, with the location of 400 randomly selected homes built during three time periods (pre-1997, 1997–2007, and 2008–2018)

included mobile homes, businesses, detached garages, or outbuildings such as larger sheds. Small sheds—those <120 ft^2, where a building permit is not required—were excluded. Such smaller sheds may have posed a threat to the home as well but were more challenging to consistently quantify, especially if under a tree canopy. We determined the density of structures in the surrounding area by counting the number of single-family homes, partially-built homes, mobile homes, and businesses (excluding small sheds) with midpoints (based on a visual estimate) included within a 100-m radius centered on the target home. We then counted how many of those structures were destroyed. We visually estimated the percentage cover of overstory vegetation from Google Earth images taken prior to the fire in 2018 and/or 2017 within a 30-m radius circle centered on the selected home and between 30 m and 100 m from the selected home. Cover of the understory of grass and/or shrubs or landscape plantings was not estimated, as pre-fire overstory canopy cover was relatively high, and this often obscured the understory. Some larger mid-story shrubs might have been included with the tree overstory due to the difficulty in distinguishing them from trees. The lot size was provided in the Butte County Assessor's data. Whether the house was located in the Wildland Urban Interface (defined as developed areas that have sparse or no wildland vegetation but are near a large patch of wildland) or the Wildland Urban Intermix (defined as areas where houses and wildlands intermingle) was determined by overlaying a University of Wisconsin data layer on the city of Paradise (Radeloff et al. 2005). We used Radeloff et al. (2005) to define the interface as census blocks with at least 6.17 housing units km^{-2} that contained <50% wildland vegetation but were within 2.4 km of a heavily vegetated area (>75% wildland vegetation) larger than 5 km^2. Intermix was defined as an area with more than 6.17 housing units km^{-2} but dominated by wildland vegetation. Percent slope was calculated as the rise between the lowest and highest point along a 100-m radius circle centered on the home.

Analysis approach

Possible explanatory variables (S1 Table) were first analyzed individually using a generalized linear model in SAS PROC GENMOD and assuming a normal distribution to evaluate whether they differed by time period or by outcome (survived, destroyed). To account for the sampling scheme, in this and all subsequent analyses, each observation was weighted by the inverse of its probability of selection—i.e., homes from time period 1 had a weight of 7288/200, homes from time period 2 had a weight of 519/100, and homes from time period 3 had a weight of 142/100. Comparisons among main effects (outcome, time period) and interactions (outcome × time period) were determined using Tukey's HSD test for multiple comparisons, when significant.

To determine the relative strength of factors associated with home survival, we used a generalized linear model fit for binary response data, with a logit link function and weighting to account for the sampling scheme. Variables in the initial model were as follows:

1. Y-variable: Outcome (Survived/Destroyed); X-variables: construction time period, year built, Wildland Urban Interface/Intermix category, distance to nearest destroyed structure, total structures destroyed within 100 m, overstory canopy cover within 30 m, overstory canopy cover between 30 m and 100 m, slope, and the interaction of each with the construction time period.

When independent variables were highly correlated ($R > 0.6$), only the one most clearly mechanistically linked to outcome was included. For example, "distance to nearest structure" was highly correlated with "distance to the nearest destroyed structure," and "total structures–100 m" was highly correlated to "total structures destroyed—100 m" (Table 1), so only the latter were included. Lot size was not included as there was no clear mechanistic link with home survival, and we hypothesized that elements contributing to fire behavior would be captured by correlated variables. The Wildland Urban Interface/Intermix category was included to quantify differences in vegetation and housing arrangement at scales larger than 100 m. Non-significant interactions and non-significant main effects for variables that did not have a significant interaction with time were sequentially removed to produce the final model. To determine whether homes constructed after the Chapter 7A building code update survived at a significantly higher rate after factoring in all other possible confounding variables, the same analysis was conducted except without interactions with the construction time period.

We then designed models to first test the effect of variables that may have directly influenced home survival during the fire and second, to test the effect of just the variables available prior to the fire. The latter variables were ones that might be mitigated preemptively through planning, retrofitting, or vegetation management. For each of these models, we determined the effect size and performed a regression tree analysis. Variables included for each approach (accounting for the fire, pre-fire only):

1. Y-variable, accounting for the fire: Outcome (Survived/Destroyed); X-variables: year built, distance to nearest destroyed structure, total structures destroyed within 100 m, canopy cover within 30 m,

Table 1 Significance of individual factors by time period, outcome (destroyed, survived), and outcome × time period for a subset of single-family homes in Paradise, CA. Means for time period, outcome, and outcome × time period (when interaction was significant) are provided below (standard error in parentheses). Levels within variables followed by different letters were significantly different ($P<0.05$)

	N	Lot size (ha)	Dist. nearest struct. (m)	Dist. nearest destr. struct. (m)	Total structures 100 m	Total structures destr. 100 m	% Canopy cover 0–30 m	% Canopy cover 30–100 m	Slope (%)
		P							
Outcome		*0.946*	*0.971*	*<0.001*	*0.004*	*<0.001*	*0.154*	*0.001*	*0.532*
Time period		*0.153*	*0.010*	*<0.001*	*0.002*	*<0.001*	*<0.001*	*0.664*	*0.290*
Outcome × time period		-	-	*0.026*	-	-	-	-	-
		Average (standard error)							
Destroyed	296	0.42 (0.07)	15.4 (1.6)	-	10.3^{a} (0.8)	8.9^{a} (0.7)	40.5 (3.1)	49.1^{a} (2.8)	6.9 (0.6)
Survived	104	0.42 (0.08)	15.5 (1.9)	-	8.1^{b} (0.9)	5.5^{b} (0.9)	36.0 (3.7)	40.0^{b} (3.3)	7.2 (0.6)
Before 1997	200	0.30 (0.04)	10.9^{b} (0.8)	-	11.4^{a} (0.4)	9.4^{a} (0.4)	49.5^{a} (1.6)	46.7 (1.4)	6.4 (0.3)
1997-2007	100	0.45 (0.09)	16.1^{a} (2.1)	-	8.0^{b} (1.0)	5.9^{b} (1.0)	35.7^{b} (4.1)	43.7 (3.7)	7.5 (0.7)
2008-2018	100	0.51 (0.17)	19.3^{ab} (4.0)	-	8.1^{ab} (1.9)	6.3^{ab} (1.8)	29.5^{b} (7.9)	43.2 (7.0)	7.2 (1.4)
<1997 Dest.	177	-	-	12.3^{c} (0.8)	-	-	-	-	-
<1997 Surv.	23	-	-	22.3^{b} (2.1)	-	-	-	-	-
1997–2007 Dest.	63	-	-	20.0^{bc} (3.4)	-	-	-	-	-
1997–2007 Surv.	37	-	-	34.6^{ab} (4.4)	-	-	-	-	-
2008–2018 Dest.	56	-	-	16.1^{bc} (6.8)	-	-	-	-	-
2008–2018 Surv.	44	-	-	54.0^{a} (7.7)	-	-	-	-	-

canopy cover between 30 m and 100 m, wildland urban interface/intermix category, slope.

2. Y-variable, pre-fire only: Outcome (Survived/Destroyed); X-variables: year built, distance to nearest structure, total structures within 100 m, canopy cover within 30 m, canopy cover between 30 m and 100 m, wildland urban interface/intermix category, slope.

To quantify the relative strength of continuous variables for explaining home survival, each of the dependent (x) variables were centered and scaled to have a mean of zero and standard deviation of one. Logistic regression (McCullagh and Nelder 1989) was then used to calculate coefficients and compare effect sizes. The logistic regression models were fit using the *svyglm* function from the *survey* package in R (Lumly 2020). A decision tree for predicting home survival was produced using the *rpart* function in the *rpart* package (Therneau and Atkinson 2019) in R, fit for binary response data with a logit link function (Breiman 1998). This approach is similar to logistic regression, where the linear predictor is a decision tree model. To determine the number of splits in the decision trees, we performed cross-validation 10,000 times to compute the optimal pruning parameters. We then used the average of the 10,000 optimal pruning parameters as the pruning parameter in the final decision tree. The latter group of statistical analyses was completed using R version 4.0.0 (R Core Team 2020). Figures were made in R using the *ggplot2* package (Wickham 2016).

Visual evaluation of damaged homes

To learn more about vulnerabilities of the Paradise home sample and gain insight into potential points of fire entry, we reviewed the CAL FIRE damage inspection (DINS) spreadsheet (obtained from CAL FIRE 12/18/2018) and obtained photographs of all damaged homes (N=310 homes with pictures).

Photographs typically keyed in on the damage, and we reviewed each, along with notes about damage in the DINS summary. Observed home damage was assigned to radiant heat, direct ember ignition, or flame impingement categories (S2 Table), based on the nature of the damage, location on the home, and visual as well as photographic (aerial imagery) evidence of other burned fuels, including homes, in the immediate vicinity. Homes where flame impingement was recorded were further split into three categories: (1) caused by fuel continuity with the broader landscape (which allowed fire to reach the home), (2) indirect ember ignition (e.g., gutter contents, near-home fuels) with flames then impacting the home, or (3) unknown/undetermined. [The DINS assessment gathered similar information, but the full suite of data was not collected for over a quarter of homes and ember ignition was not separated into direct and indirect categories.] Where DINS data were collected, our evaluation was often in agreement, but there were a few instances where we differed. For example, if the DINS assessment noted "direct flame impingement" but the photo showed no charring or near home fuels consumed, we listed the damage caused as "radiant heat." Gutter fires were variously categorized but we assigned them all to the "indirect ember ignition" category. The DINS assessment also only lists a single cause of fire damage when a considerable number of homes displayed multiple causes.

Results

Overall, most (86%) of the single-family homes in Paradise were built before 1990, and homes of this age fared poorly, with only 11.6% surviving the Camp Fire (Fig. 2). Survival increased to 20.6% for homes built between 1990 and 1996, 34.3% for homes built between 1997 and 2007, and 43.0% for homes built between 2008 and 2018. The 400 randomly selected homes in our sample had similar survival rates to the full population of single-family homes—11.5% vs. 13.3%, respectively, for the <1997 time period (time = 1), 37.0% vs. 34.3%, respectively, for the 1997–2007 time period (time = 2), and 44.0% vs. 43.0%, respectively, for the 2008 to 2018 time period (time = 3). Many of the potential explanatory variables differed over the three time periods as well and were therefore confounded with potential construction or building code differences (Table 1). Older homes (<1997) were on average in areas with higher housing density and had more homes burn within 100 m than homes built from 1997 to 2007 (Table 1). Homes built prior to 1997 had a higher average pre-fire overstory canopy cover in the first 0–30 m from the home than homes

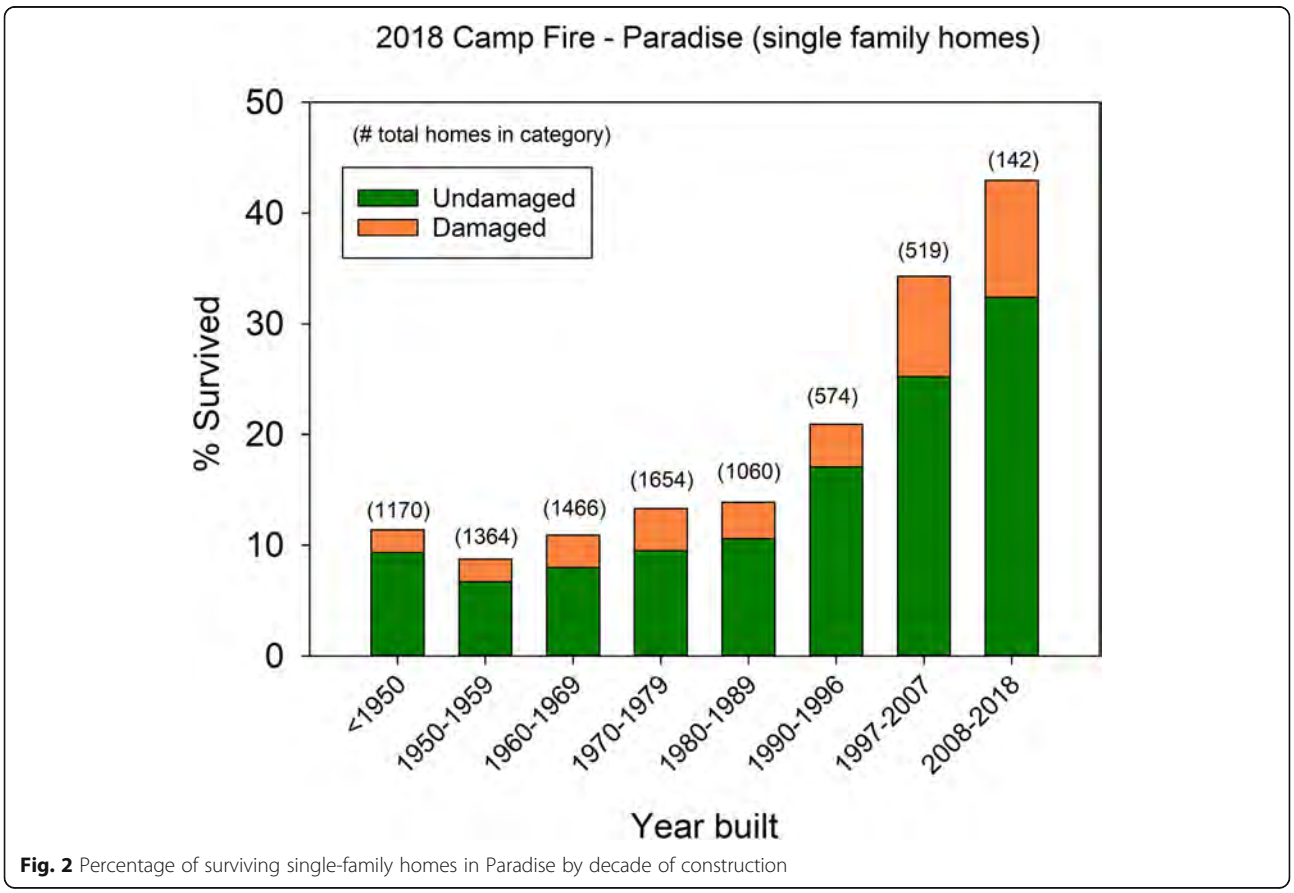

Fig. 2 Percentage of surviving single-family homes in Paradise by decade of construction

built afterwards (Table 1). The "distance to nearest destroyed structure" × time interaction was significant, with surviving homes a greater distance from the nearest destroyed structure in time periods one and three. This difference was especially pronounced for the newest homes (Table 1). While average lot size trended larger over time, the differences were not significant (Table 1). Pre-fire overstory canopy cover 30–100 m from the home was significantly lower for surviving homes (37.0%) than destroyed homes (50.4%) but did not differ between time periods (Table 1). With most houses situated on top of a plateau, the average percent slope was relatively low and did not differ significantly among outcomes or time periods (Table 1). None of the variables differed between time periods 2 and 3—immediately pre- and post-Chapter 7A adoption.

Many of the continuous variables we analyzed were significantly correlated with each other, with distance to nearest structure and distance to nearest destroyed structure (r = 0.625) and total structures within 100m and total structures destroyed within 100m (r = 0.926) being the most strongly correlated (Table 2).

Factors influencing home survival

Eliminating the two most highly correlated variables (distance to nearest structure and total structures per 100m) and analyzing the remaining variables together in the same model showed that both nearby destroyed structures and overstory canopy cover within 100 m were significantly associated with home survival. The "distance to nearest destroyed structure" × construction time period interaction was significant (Table 3), with a much higher survival probability when homes were a larger distance from a destroyed structure, especially for homes built 1997–2007 and 2008–2018 (Fig. 3a). Total structures destroyed within 100 m also was strongly linked to home survival (Table 3), with a much higher survival probability when fewer surrounding homes burned (Fig. 3b). For the vegetation variables, the "CanopyCover 0–30m" × construction time period interaction was significant (Table 3). Higher survival was noted with lower canopy cover for homes built since in 1997 and after but was not related to survival in older (<1997) homes (Fig. 3c). CanopyCover 30–100m also was highly significant, with a higher survival probability at lower canopy cover percentages across times (Table 3, Fig. 3d). Wildland urban interface/intermix category was significant, with a higher survival rate for homes in the wildland urban intermix (29.3%) than homes in the wildland urban interface (16.0%). Year built [within construction time period] and slope were not significant and did not make it into the final model (Table 3).

When the same analysis was conducted without interactions to test the effect of construction time period after correcting for covariates, homes built between 1997–2007 and 2008–2018 both survived at a significantly higher rate than homes built prior to 1997 ($P < 0.001$). Even though the survival rate was numerically higher for homes built after the 2008 building code update (44%) than homes built in an equivalent time period

Table 2 Correlation matrix of variables considered in the analyses of factors potentially contributing to home survival. The correlation coefficient (R) is above the diagonal, with statistical significance below. Distance to nearest destroyed home includes only single-family homes. Distance to nearest destroyed structure includes single-family homes, mobile homes, businesses, outbuildings, detached garages, and other large buildings

	Lot size	Year built	Dist. nearest structure	Dist. nearest dest. structure	Total struct. 100 m	Structures destroyed 100 m	Canopy Cover (%) 0–30 m	Canopy cover (%) 30–100 m	Slope (%)
Lot size		0.166	0.544	0.462	−0.499	−0.435	−0.111	−0.001	0.368
Year built	*<0.001*		0.262	0.283	−0.406	−0.424	−0.419	−0.146	0.156
Dist. nearest structure	*<0.001*	*<0.001*		0.625	−0.497	−0.432	−0.069	0.009	0.260
Dist. nearest dest. structure	*<0.001*	*<0.001*	*<0.001*		−0.471	−0.537	−0.263	−0.226	0.216
Total struct_ 100m	*<0.001*	*<0.001*	*<0.001*	*<0.001*		0.926	0.215	−0.007	−0.299
Struct. destroyed_ 100m	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*		0.300	0.134	−0.233
Canopy Cover 0-30m	*0.026*	*<0.001*	*0.171*	*<0.001*	*<0.001*	*<0.001*		0.571	−0.001
Canopy Cover 30-100m	*0.983*	*0.003*	*0.853*	*<0.001*	*0.890*	*0.007*	*<0.001*		0.135
Slope (%)	*<0.001*	*0.002*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*0.984*	*0.007*	

Table 3 Fixed effects in a generalized linear mixed model (PROC GENMOD) analysis of variance of the influence of nearby destroyed structures and pre-fire overstory canopy cover on Paradise single-family home loss in the Camp Fire, taking into account other potentially confounding variables. All variables plus their interactions with time period were put in the preliminary model with non-significant interactions and main effects sequentially dropped for the final model

Variable	DF	Chi-square	*P*
Construction time period	2	68.84	*<0.001*
Dist. nearest destroyed structure	1	57.10	*<0.001*
Tot. structures destroyed 100 m	1	179.77	*<0.001*
Canopy cover_0–30 m	1	1.61	*0.205*
Canopy cover_30–100 m	1	162.48	*<0.001*
Wildland urban intermix/interface category	1	4.54	*0.033*
Dist. nearest destroyed structure × time	2	16.45	*<0.001*
Canopy cover_0–30 m × time	2	25.35	*<0.001*

immediately before (37%), the difference was not statistically significant (adjusted $P = 0.309$).

For the next set of analyses, separate models (this time without specifying construction time period) were run on normalized data for (1) variables in play during the Camp Fire (including fire-related variables) and (2) variables present prior to the Camp Fire (i.e., variables that might factor into pre-fire planning). For the first model, distance to the nearest destroyed structure had the largest effect size, suggesting that the greater the distance to a burning structure, the higher the probability of survival (Fig. 4a). Also significant were canopy cover within 30–100 m and the number of destroyed structures within 100 m. Both the latter two variables had a negative relationship with survival, with higher survival where canopy cover within a 30–100 distance was lower, and number of destroyed structures within 100 m was fewer (Fig. 4a). Year built, slope, and canopy cover within 0–30 m all had confidence intervals that overlapped with zero. When only pre-fire variables were included, housing density had the largest effect size, with greater survival when the number of structures within 100 m was low (Fig. 4b). Canopy cover within 30–100 m had the second largest effect size, with greater survival at lower canopy cover levels (Fig. 4b). Distance to nearest structure, year built, slope, and canopy cover within 0–30 m all had confidence intervals that overlapped with zero (Fig. 4b).

Decision tree analysis using variables present during the fire indicated a threshold of 18 m from nearest destroyed structure best predicted whether a home survived or not. Survival probability for homes <18 m to the nearest destroyed structure was very low (0.058), compared with a 0.354 survival probability for homes ≥18 m from the nearest destroyed structure (Fig. 5a). Based on our sample, a majority (73.6%) of the homes in Paradise were <18 m from a destroyed structure. For the 26.3% of homes ≥18 m from a destroyed structure, if the pre-fire overstory canopy cover was also < 53% within 30–100 m, the survival probability improved to 0.481 (Fig. 5a). If the home was also built during or after 1973, the survival probability improved to 0.606 (Fig. 5a). The final split, involving just 10.2% of the homes in Paradise, suggested that for homes meeting these criteria (i.e., ≥18 m from the nearest destroyed structure, <53% canopy cover within 30–100 m, and built ≥1973), the survival probability improved to 0.733 if slope was less than 8.2%. For the decision tree including just pre-fire variables, year built was the first split, with a probability of survival of only 0.111 for homes built before 1996 (90.8% of homes in Paradise), compared with 0.396 for homes built during or after 1996 (9.2% of homes) (Fig. 5b). For homes in this latter category, survival probability improved to 0.766 if the pre-fire overstory canopy cover within 30–100 m was <33%. If pre-fire canopy cover within 30–100 was ≥33%, the survival probability fell to 0.239.

Damaged homes—nature of damage and cause

In our review of photographs of the 310 fire-damaged homes in Paradise, 63% had radiant heat damage (Fig. 6a), mostly to windows and exterior walls (Fig. 6b). Window damage consisted of cracked or broken glass and damaged window framing, but frequently included both. Blistered paint or melted/sagging vinyl siding were the most common wall (siding) damages. In most cases, the source of the radiant heat was difficult to assess, as the photos focused on the damage. However, a closer investigation of 20% of randomly sampled of homes where radiant heat damage was identified demonstrated that all had at least one neighboring structure that was destroyed during the fire, with an average distance to the destroyed structure of 12.1 m. Flame impingement was the next most common cause of damage (44% of damaged homes) (Fig. 6a). In most flame impingement cases (28% of the total damaged homes), the damage was interpreted to be the result of indirect ember ignition. For only 10% of damaged homes was the continuity of fuels from the broader surroundings (often needle or leaf litter) identified as the likely reason for flame impingement. For another 10% of damaged homes, whether needle or leaf litter was continuous with the surroundings or just localized next to the home could not be determined from the photograph. [Note—these three flame impingement categories do not add to 44% because some houses showed evidence of multiple flame impingement causes.] For the cases of flame impingement via indirect ember ignition, embers ignited near home flammable objects (e.g., fences, patio furniture, stored lumber), near home leaf litter, near home vegetation (or litter under that vegetation), leaf litter in gutters, or wood bark mulch, in order of frequency from most to least (S2 Table). Direct

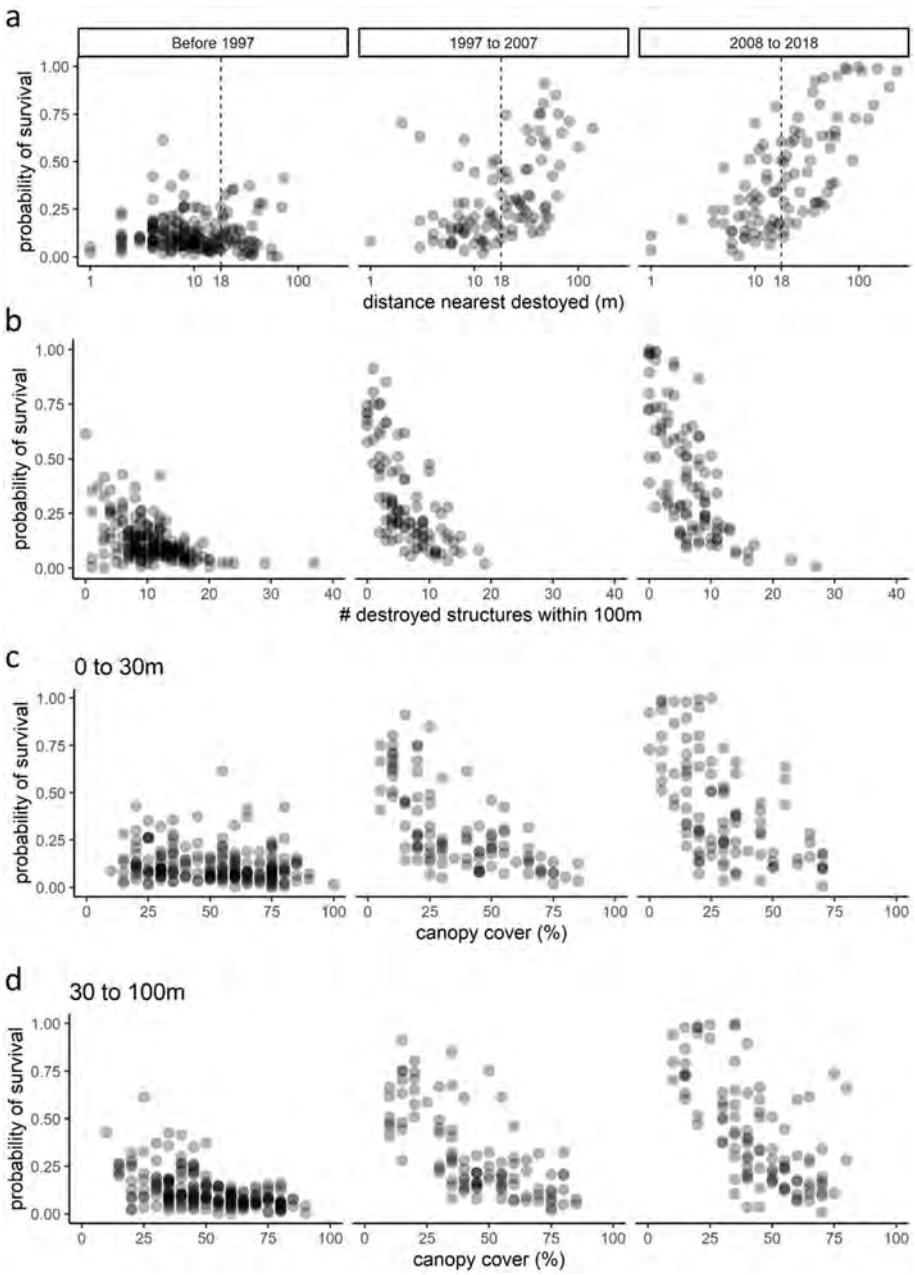

Fig. 3 Probability of home survival with **a** distance (m) to nearest destroyed structure, **b** the number of destroyed structures within a 100-m radius, **c** pre-fire overstory canopy cover within 0–30 m, and **d** pre-fire overstory canopy cover within 30–100 m, for homes built during three time periods (before 1997, 1997–2007, and 2008–2018). A vertical dotted line in **a** shows the 18-m threshold between survival and destruction identified by the regression tree analysis (Fig. 5a)

ember ignition was identified as the likely cause of damage for fewer than 6% of homes (Fig. 6a). The most common locations for embers to ignite were attached wood stairs, decking, and window trim. Counting either direct ember ignition or flame impingement due to indirect ember ignition, embers were implicated as a cause in 33% of damaged homes.

Discussion

Burning structures and wildland fuels both influence home survival

Our analysis of post-fire outcomes in the town of Paradise suggested that both the proximity to other burning structures and nearby wildland fuels factored in the probability of home survival, with several measures of

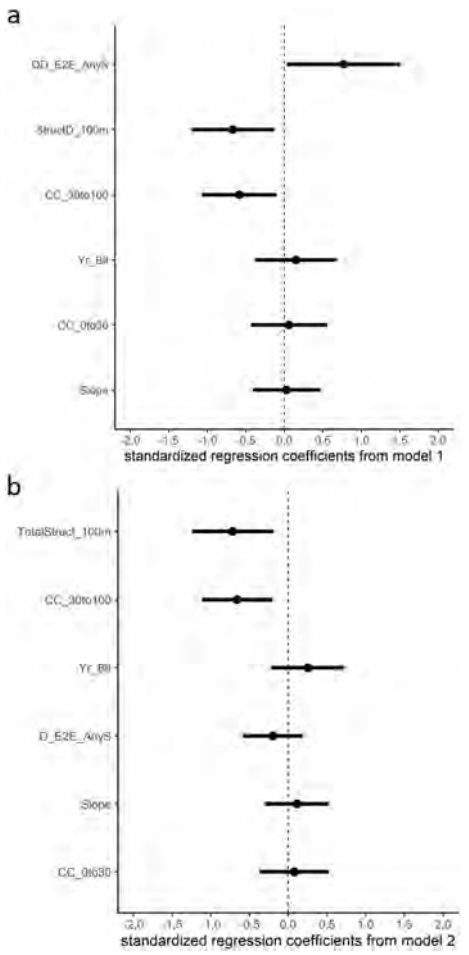

Fig. 4 Effect sizes for two logistic regression models of home survival in the town of Paradise during the 2018 Camp Fire, including continuous variables **a** present during the fire and **b** only variables present pre-fire. Regressions were based on a random sample of 400 homes

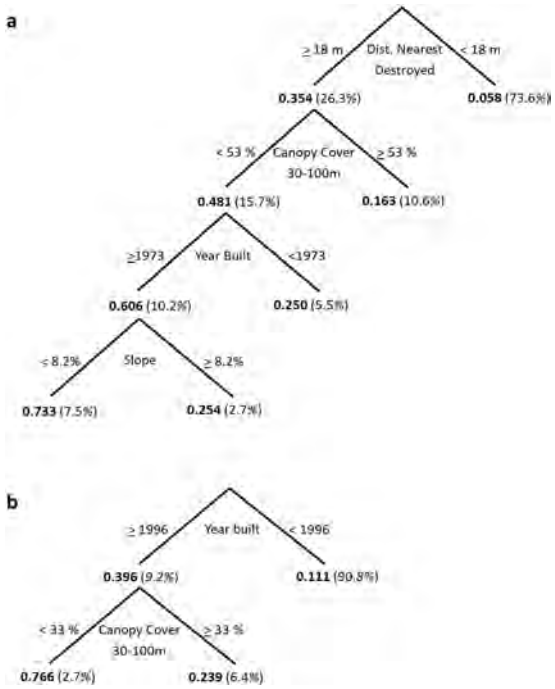

Fig. 5 Regression trees for predicting home survival in the town of Paradise in the 2018 Camp Fire, with models including continuous variables **a** present during the fire and **b** only variables present pre-fire, both based on a random sample of 400 homes. Survival proportion is listed in bold under each branch, along with the percentage of homes in Paradise that each branch applied to (in parenthesis)

distance and density of destroyed structures and nearby pre-fire overstory canopy cover emerging as significant explanatory variables. The relative importance of nearby burning home variables versus surrounding vegetation in explaining outcomes has varied among studies, with Gibbons et al. (2012) reporting canopy cover within 40m of the home to be the strongest predictor. Number of buildings within 40m was also a significant variable in their analysis. Even though nearby burning structure and vegetation variables were both included in the models in our study, interpretations about relative strength of these two sets of factors are tempered by limitations of the vegetation data, with overstory canopy cover an imperfect measure of wildland fuel hazard.

One possible clue to the relative importance of adjacent structures burning comes from the different outcomes for wildland urban intermix and interface homes. Houses built amongst wildland vegetation (intermix) survived at a higher rate (29%) than houses built in more of a subdivision arrangement with wildland fuels nearby (interface) (16%). Average pre-fire overstory canopy cover within 0–30 m was similar for intermix and interface homes (42% and 43%, respectively), but pre-fire overstory canopy cover within 30–100 m was higher for intermix than interface homes (49% vs. 42%, respectively). If proximity to wildland fuels had been the dominant driver, greater percentage losses in the wildland urban intermix would have been expected. The higher survival of intermix homes may therefore have been more a function of greater average distance to the nearest destroyed structure (24 m vs. 11 m in the intermix and interface, respectively) and lower average density (7.7 vs. 11.1 structures within 100 m in the intermix and interface, respectively). (Kramer et al. 2019) in an analysis of three-decade's worth of wildfires in California, also reported higher survival of homes in the wildland-urban intermix compared to the wildland-urban interface, and together with our results provide some additional evidence of the importance of nearby burning structures to home loss, relative to variables associated with wildland fuels. However, in our study, other factors

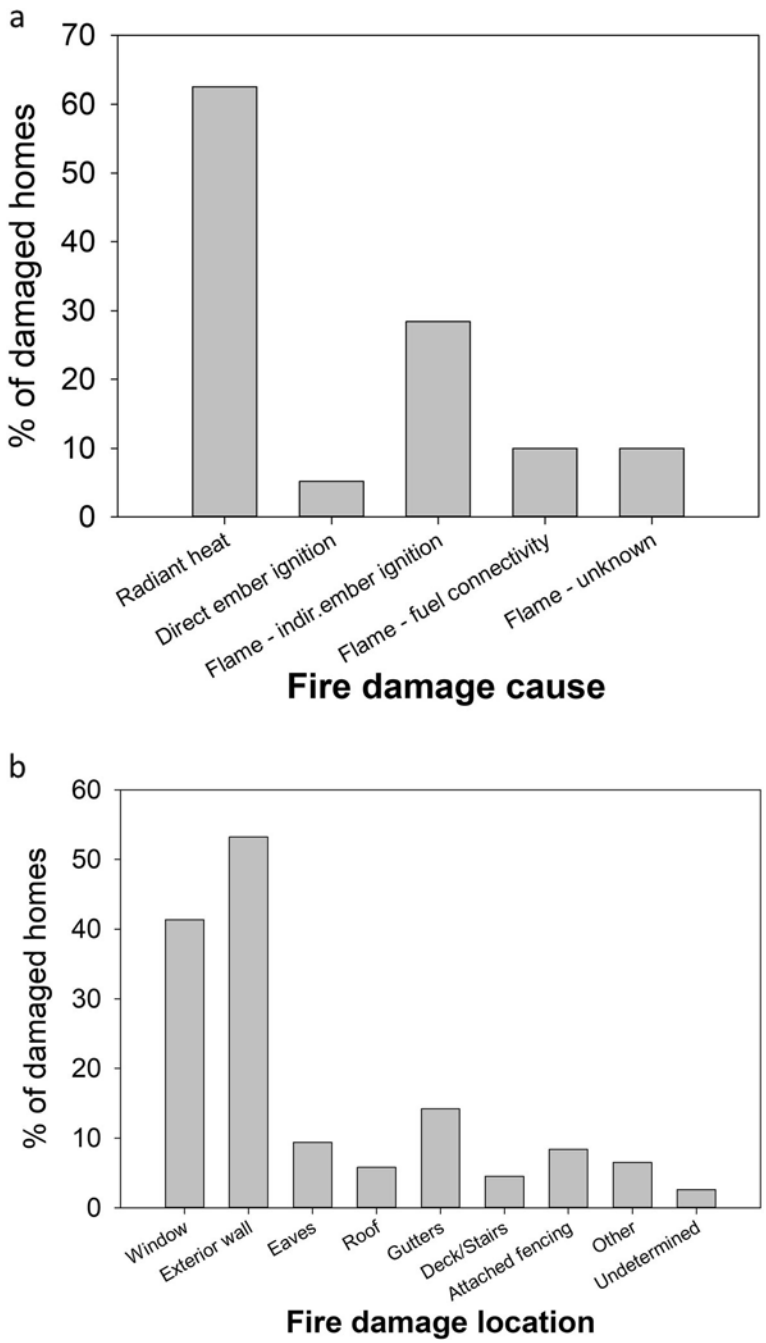

Fig. 6 Percentage of damaged but not destroyed homes in Paradise by **a** fire damage cause category and **b** fire damage location. Fire damage cause was either radiant heat, direct ember ignition, or flame impingement. Flame impingement was further subdivided into flame impingement due to indirect ember ignition, fuel continuity with the broader landscape, or unknown. Numbers were based on visual assessment of photos taken by the CAL FIRE inspectors and information in the CAL FIRE DINS (damage inspection) data. Totals exceed 100% because some homes had multiple sources of fire damage

were likely in play as well, with intermix homes being somewhat newer. In Paradise, an increasing percentage of homes were located in the intermix vs. the interface over time: 66% in time period 1, 80% in time period 2, and 88% in time period 3.

Homes as fuel

Distance to nearest destroyed structure and the total number of destroyed structures within 100 m were consistently the strongest predictors in our analyses. This makes intuitive sense because burning structures

produce a substantial amount of radiant heat, which can ignite adjacent homes or break glass in windows, allowing embers to enter the home. Nearby burning structures are also a source of embers, which can result in direct or indirect ember ignitions of nearby structures. Our visual analysis of 310 damaged homes corroborated the results of the statistical analyses, with more homes showing evidence of damage from radiant heat exposure (often from adjacent structures burning) than from flame impingement. Our findings are consistent with other analyses of destructive wildfires showing housing density to be strongly associated with home loss (Price and Bradstock 2013; Penman et al. 2019), but in contrast to Syphard et al. (2012, 2014, 2017) and Syphard and Keeley (2020), who have reported reduced probability of home loss at higher housing densities. The difference between studies likely has to do with variation in density ranges evaluated, as well as variation in vegetation type and housing arrangement. Syphard et al. (2012) sampled large fire-prone regions with shrub-dominated vegetation in southern California, ranging from outlying WUI areas to denser cities that did not burn to answer the question of housing arrangements most prone to loss in a wildfire. Since the entire scope of our analysis was within the Camp Fire perimeter, our research question differs: when burned, what factors influenced survival? In any case, the interpretation of Syphard et al. (2012, 2014, 2017) of lower loss probability with higher density development may not apply to different development patterns, including those present in Paradise. Such intermediate to low density wildland urban intermix and interface development interspersed with native (and non-native) vegetation is prevalent in foothills and lower mountainous regions of central and northern California (Hammer et al. 2007). In chaparral dominated ecosystems of southern California, high-density housing might result in more of the proximate shrub vegetation being removed, but in Paradise, overstory canopy cover within 0–30 m of the home was actually positively correlated with housing density.

At what distance an adjacent burning structure presents a vulnerability is not well studied. Our analyses identified a threshold of 18 m from the nearest destroyed structure that best differentiated surviving and destroyed homes (Fig. 5a). Price and Bradstock (2013) found the presence of houses within 50 m to be predictive of loss. Radiant heat flux, which is inversely related to distance from the flaming source, can be a factor up to 40 m from a burning structure (Cohen 2000). Cohen (2004) reported that models predicted ignition of wood walls when less than 28 m from a crown fire in forested vegetation, with actual experimental crown fires finding ignition at a 10-m distance, but not 20 m or 30 m. The radiant heat flux adjacent to burning structures is different and likely more sustained than a similar heat flux adjacent to crowning wildland vegetation.

Between home spacing has been evaluated in post-fire assessments conducted after the Witch Fire in San Diego County, California (Insurance Institute for Business and Home Safety 2008), the Waldo Canyon Fire in Colorado Springs, Colorado (Quarles et al. 2013), and the Black Bear Cub Fire in Sevier County, Tennessee (Quarles and Konz 2016). During each of these fires, home-to-home spread was observed with spacing less than 10 m. The IBHS Witch Fire report (Insurance Institute for Business and Home Safety 2008) referred to home-to-home spread as "cluster burning," which was not observed when homes were located more than 14 m apart. Our finding of an 18-m threshold is similar to the IBHS Witch Fire results. Regardless of the actual ideal home separation level, many homes in fire-prone areas of the western USA are on lot sizes that do not permit more than 18 m of separation between buildings.

Wildland fuels and defensible space actions

Pre-fire overstory canopy cover was a significant predictor of home survival in the statistical models, with the canopy cover 30–100 m away having a larger effect size than canopy cover in the immediate vicinity of the home (0–30 m) (Fig. 4a, b). This result (and other evidence, below) suggests that overstory canopy cover may only be correlated to factors that contributed to fire spread and increased the threat to homes, rather than a direct contributor. The often indirect influence of tree canopies on home survival, mediated by the litter fuels produced rather than canopy combustion, has been noted by others (Keeley et al. 2013). Wildland fire spread is dependent on surface fuels—litter, duff, and dead and down woody material, which would be expected to be most abundant and continuous under or adjacent to overstory tree canopy. The link between overstory canopy cover and surface fuel abundance may have been weaker from 0 to 30 m than distances farther removed from the home because of the greater likelihood that such surface fuels were better managed near homes, perhaps as a result of defensible space activities. In addition, the continuity of vegetative fuels is more likely to be broken up by lawns, driveways, or irrigated landscaping near the home. While vegetation abundance within 30 m has been reported to be associated home loss in southern California fires burning in shrubland vegetation types (Syphard et al. 2014, 2017), Alexandre et al. (2016) found vegetation near a building not to be a strong factor in models of loss for fires in southern California and Colorado. They theorized that the connectivity of vegetation to the home was more critical than vegetative cover.

While burning trees and associated vegetation may generate substantial flame lengths and embers which can

then threaten homes, the overstory tree canopies themselves did not appear to drive fire intensity in most cases. With the Camp Fire, many overstory trees located away from burning homes survived (Keeley and Syphard 2019; Cohen and Strohmaier 2020) (Fig. 7). Rather than tree torching directly impacting nearby structures, the torching of trees and other vegetation appeared from photographs and personal observation to frequently be caused by heat from nearby burning structures. Additionally, a substantial proportion of the canopy of native tree vegetation in Paradise at the time of the fire was comprised of California black oak (*Quercus kelloggii* Newb.), a native deciduous species that would have shed at least a portion of its leaves by the time of year when the Camp Fire burned through Paradise. Even when fully leafed out, the crowns of black oak trees are relatively open with low canopy bulk density. Deciduous oak litter breaks down faster than conifer litter, and the light fuel loads in pure black oak stands tend to promote low-intensity surface fire rather than crown fire (Skinner et al. 2006). Ponderosa pine (*Pinus ponderosa* Lawson & C. Lawson) was the other major native tree species. Leaf and needle litter can carry flames to the home or provide receptive fuels for ember ignitions and would likely have been positively correlated to pre-fire overstory tree canopy cover, especially in the fall. Embers can also ignite litter that has accumulated in gutters and roofs. High pre-fire overstory canopy cover may also indicate areas where associated vegetation and surface fuels had developed to the greatest extent in the absence of fire and active management, especially at a distance from homes. With the lands in the Paradise area having no record of fire in modern recorded history (Maranghides et al. 2021), considerable vegetative ingrowth and accumulation of dead and down surface fuels was likely, especially relative to historical amounts. Ingrowth could have included brush and smaller conifers that acted as ladder fuels, leading to torching and ember generation.

Even though our data showed a stronger association between pre-fire overstory tree cover and home survival for distances beyond which defensible space is typically mandated (100 ft or 30 m), this does not mean that vegetation modification within 30 m is any less important. For reasons described earlier, the fuel hazards contributing to outcome were likely not well captured by the overstory canopy cover variable, especially in this near-home zone. In addition, once structures become involved, defensible space vegetation modification to 30 m (100 ft) may be insufficient to mitigate ember and radiant heat exposures contributing to home loss. In an analysis of CAL FIRE DINS data over multiple fires, including the Camp Fire, Syphard and Keeley (2019) reported that defensible space was a poor predictor of outcome, with structural variables (e.g., eave construction details, numbers of windowpanes (double vs. single), vent screen size) more highly correlated with home survival. The low predictive power of defensible space may be partially due to the coarseness with which defensible space is classified in the DINS data, with broad distance categories not fully capturing spacing, composition, or flammability of the vegetation. In addition, in many destructive wildfires, a large portion of homes are lost through direct or indirect ember ignition and not flame impingement associated with the continuity with

Fig. 7 Aerial image showing a portion of Magalia just NW of Paradise, illustrating a gradient of fire damage to overstory vegetation with distance from destroyed homes. At least in some areas, burning homes may have influenced the effects to overstory vegetation more so than burning overstory vegetation influenced the outcome to homes. Photo: Owen Bettis, Deer Creek Resources

wildland fuels (Murphy et al. 2007; Cohen and Stratton 2008). With embers capable of igniting fuels over 1–2 km away, the protective effect of vegetation modification within 30 m of the house does not guarantee survival when fire-fighting resources are not present. Vegetation modifications in this zone, however, do provide access and a safer means of protecting a home when firefighting resources are available.

Our analysis relied upon aerial photo interpretation, and we could not assess surface fuels under dense tree canopies. As a result, and because of the likely indirect effect of leaf litter coming from the canopy, we caution against using cover percentages in the decision trees as forest thinning targets. Furthermore, surface and near-ground live fuels are considered the priority for altering fire behavior and influencing fire hazard (Agee and Skinner 2005). Higher canopy cover may be correlated to the rate of surface litter and woody fuel accumulation but does not necessarily directly translate to high fire hazard if these surface fuels are managed and maintained at low levels. In other words, higher overstory canopy cover can provide important amenities (e.g., shade, habitat—Gibbons et al. 2018) without undue fire hazard as long as the resulting litter and surface fuels are maintained and gutters are cleaned. Gibbons et al. 2018 also noted that patchiness and arrangement relative to prevailing winds can also reduce threat posed by near-home vegetation.

Did the adoption of Chapter 7A into the California Building Code influence survival?

While the survival rate for homes built in the 11 years after the adoption of Chapter 7A to the California Building Code in 2008 was numerically slightly higher than the survival rate of homes built in the 11 years immediately before, the difference was not statistically significant. It is possible that significance might have been found with a larger sample size, but even so, any influence of the building code update was likely overwhelmed by other factors. This was not a surprise because of the many interacting variables that affect building performance, in addition to building products rated to resist exterior fire exposures. The 2008 Chapter 7A building code update institutionalized several important and worthwhile changes to construction in high fire hazard zones, including the use of ember and flame-resistant vents. These changes may improve the probability of survival for some types of wildfire (e.g., vegetation and wind-driven fires); however, the changes were apparently not sufficient to fully protect buildings from radiant heat exposures from nearby burning structures. One of the primary mechanisms for radiant heat impact is the breaking of window glass, which can allow embers to enter the building (Penman et al. 2019). A common method for complying with Chapter 7A is through the use of tempered glass in one pane of a double-paned window. However, the magnitude of radiant heat exposure was likely still too much in many cases, or other vulnerabilities remained.

Variation in factors contributing to home loss across construction time periods

In models for predicting survival, the significant interaction of several of the potential explanatory variables with construction time period suggested that factors most strongly influencing home vulnerability differed for homes of different ages. Homes built in the most recent two 11-year periods (1997–2007 and 2008–2018) survived at a significantly higher rate than homes built prior to 1997. Factors potentially contributing to this increase include trends towards a longer average distance to the nearest structure and nearest destroyed structure, and a larger average lot size. Newer homes had lower pre-fire overstory canopy cover in the immediate vicinity (0–30m), whereas the older homes tended to be concentrated near the center of Paradise, where pre-fire overstory tree cover was higher. The two most recent construction time periods also saw changes in building construction including roofing materials having longer periods of robust performance (i.e., 30–50 years of service life), double-pane windows (as a result of changes to the energy code), and increased use of noncombustible fiber-cement siding. Many of these improvements, which potentially make newer homes less vulnerable to wildfire exposures, occurred well before the 2008 Chapter 7A update to the building code. Older homes may also have developed vulnerabilities resulting from overdue home maintenance. We speculate that with a higher proportion of newer homes surviving the ember onslaught, outcome then depended to a greater extent on degree of radiant heat exposure from nearby burned structures. This hypothesis is supported by the much stronger influence of distance to nearest burned structure and the number of structures burned within 100 m for newer (1997 and after) than older <1997) homes. A substantially lower proportion of older homes survived regardless of the distance to or density of nearby burned structures, suggesting other vulnerabilities (such as maintenance issues). Another factor that may have increased the survival probability of newer homes was simply less time for occupants to accumulate combustible items on their properties (e.g., sheds, stored objects, wood piles, play structures). The difference between distance to nearest home and distance to nearest structure was much greater for older than newer homes (data not shown), indicative of structures such as sheds, detached garages, or other outbuildings being added to properties over time. Our summary of damage location and cause

for damaged homes as well as first-hand accounts (Maranghides et al. (2021); N. Wallingford, personal communication) indicated such non-vegetative items were frequently ignited by embers and the reason for a flame impingement exposure.

Difficulties in post-wildfire interpretation

A primary challenge in determining the potential causes for building survival after wildfire can be the variation in fire behavior experienced. The Camp Fire was no exception, with considerable observed differences in fire spread rates driven by ember-ignited spot fires, along with complex topography and local variation in wind speed (Maranghides et al. 2021). However, the Camp Fire burning through Paradise in 1 day may still have provided a more homogenous burn environment than present in many other post-fire evaluations of home survival, most of which combined data across multiple fires in different geographic locations and years (e.g., Syphard et al. 2012, 2017; Alexandre et al. 2016; Penman et al. 2019; Syphard and Keeley 2019)). Another factor that can often complicate interpretation is variation in the extent of firefighter intervention (McNamara et al. 2019). In the case of the Camp Fire, with the focus of first responders initially on evacuation, relatively few homes experienced defensive action by firefighters or civilians (according to the DINS assessment, defensive action was noted for only seven of the 400 randomly selected homes (1.7%), six of which survived). More broadly, while similar factors as those analyzed in this study may be pertinent in other wildfires, it is important to recognize that the variables identified here were specific to the housing, vegetation, and topographic conditions found in Paradise and may not apply elsewhere.

Determining pre-fire structural characteristics post-fire is difficult and availability of such data is generally limited (Syphard and Keeley 2019). Details about near-home vegetation, especially within the first 1.5 m of the structure, which has been shown to be an especially vulnerable location for ember ignition, were not available. We were also not able to quantify the presence and distance to small sheds and other storage structures, the age and condition of the roofing, or individual residents' maintenance practices. The DINS data (e.g., extent of vegetation clearing for defensible space, siding type, type of window glass (single or multi-pane), deck construction, and presence of attached fencing) have value, but missing data and lack of information for structures not damaged or destroyed limit the utility for some analyses. We instead focused on variables that could be consistently evaluated on every home, such as pre-fire overstory canopy cover and distance to the nearest destroyed structure. Our vegetation variables were, however, coarse, and likely missed factors that contributed to home survival.

Lastly, for the damaged home cause and area of damage summary, it is important to acknowledge that the vulnerabilities may differ for damaged and destroyed homes. With evidence for what contributed to loss no longer available for destroyed homes, damaged homes provide a picture of the different vulnerabilities, but the relative contribution of factors involved may not be the same.

Conclusions

The results of this study support the idea that both proximities to neighboring burning structures and surrounding vegetation influence home survival with wildfire. Denser developments, built to the highest standards, may protect subdivisions against direct flame impingement of a vegetation fire, but density becomes a detriment once buildings ignite and burn. Recent examples of losses in areas of higher density housing include the wind-driven 2017 Tubbs Fire in northern California, where house-to-house spread resulted in the loss of over 1400 homes in the Coffey Park neighborhood (Keeley and Syphard 2019), and the wind-driven 2020 Almeda Fire in southern Oregon, which destroyed nearly 2800 structures, many in denser areas in the towns of Talent and Phoenix (Cohen and Strohmaier 2020). Once fire becomes an urban conflagration, proximity to nearby burned structures becomes especially important because occupied structures contain significant quantities of fuel, produce substantial heat when burned, and are a source of additional embers. For density to be protective, home and other structure ignitions would need to be rare. Fifty-six percent of homes in Paradise built during or after 2008 did not survive, illustrating that much improvement is needed in both current building codes and how we live in wildfire prone WUI areas before proximity to nearby structures becomes a benefit rather than a vulnerability. The threat posed by nearby burning structures as well as our finding of an apparent strong influence of vegetation 30–100 m from the home—a distance that in most cases encompasses multiple adjacent properties—demonstrates that neighbors need to work together to improve the overall ability of homes and communities to resist wildfire exposures.

To maximize survivability, homes need to be designed and maintained to minimize the chance of a direct flame contact, resist ember ignition, and survive extended radiant heat exposure. Our analyses demonstrating the strong influence of nearby burning structures on home survival suggests improvements to resist radiant heat exposures may be warranted in the California Building Code—i.e., increasing the standards for buildings within a certain minimum distance of other structures. Some possible improvements might include noncombustible siding with rating minimums tied to proximity to other

structures, both panes in windows consisting of tempered glass, or installation of deployable non-combustible shutter systems. Additionally, certain options for complying with Chapter 7A are better for resisting radiant heat and flame contact exposures and could minimize fire spread to other components. Whereas the International Code Council's Wildland Urban Interface Building Code (International Code Council 2017) provides three ignition-resistant construction classes to allow for material restrictions as a function of exposure level, Chapter 7A consists of one level, so is binary in nature in that a building either needs to comply, or it does not. The Australian building code for construction in bushfire prone areas, AS 3959 (Standards Australia 2018), incorporates six different construction classes based on anticipated radiant heat, flame, and ember exposure levels. Interaction between components, for example, siding, window, and the undereave area on an exterior wall, is not considered.

Our summary of damaged but not destroyed homes in Paradise was in line with other reports showing a high proportion of home ignitions indirectly resulting from embers (Mell et al. 2010). Embers frequently ignited near home combustibles such as woody mulch, fences, and receptive vegetative fuels with flames and/or associated radiant heat then impacting the home itself, supporting awareness of the importance of combustibles within the first 1.5 m (5 ft) of the building on home survival. A re-interpretation of defensible space fuel modifications is needed to increase the building's resistance and exposure to embers and direct flame contact, especially in the area immediately around a building and under any attached deck or steps. This does not diminish the value of defensible space fuel modifications 9 to 30 m (30 to 100 ft) away from the home, which not only reduces fuel continuity and the probability of direct flame contact to the home, but also provides firefighters a chance to intervene.

While our data show a relationship between home loss and vegetative fuels (high pre-fire overstory canopy cover likely associated with a greater litter and woody fuel abundance, as well as other wildland understory vegetation) that can contribute to fire intensity and ember generation, the WUI fire loss issue has been described as home ignition problem more so than a wildland fire problem (Cohen 2000; Calkin et al. 2014). The damaged home data were in line with this view, with few homes showing evidence of continuity with wildland fuels that would contribute to flame impingement, but numerous homes with near home fuels, both from manmade and natural sources, that led to direct or indirect ember ignitions.

California's Mediterranean climate will continue to challenge its residents with regular wildfire exposure throughout the state. Whether through modifying the nearby surface and vegetative wildland fuels or the home itself, adapting to wildfire will take time. The good news is that the trend in survival is improving with newer construction practices. However, with 56% of houses built after 2008 still succumbing to the Camp Fire, much room for improvement remains. Our data suggest it is possible to build (and maintain) buildings that have a high probability of surviving a worst-case scenario type of wildfire, even in fire-prone landscapes such as the Paradise area. Newer homes built after 1972, where the nearest burning structure was >18 m away, and fuels associated with vegetation 30–100 m from the home kept at moderate and lower levels (<53% canopy cover) had a 61% survival rate—an approximately 5-fold improvement over the Paradise housing population as a whole. Survival percentages substantially higher still are potentially possible if all components of risk, including ember generation in nearby wildland fuels, continuity of wildland and other fuels on the property, and home ignitability are sufficiently mitigated.

Abbreviations

DINS: Damage inspection; WUI: Wildland urban interface

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s42408-021-00117-0.

Additional file 1: S1 Table. Raw data for the random sample of 400 single-family homes in Paradise.

Additional file 2: S2 Table. Summary of fire damage cause and damage location for damaged by not destroyed single-family homes in Paradise.

Additional file 3: S3 Text. Metadata for the two data tables used in the analyses for this paper.

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Authors' contributions

EK, YV, and SQ developed the research questions and designed the study, with statistical guidance provided by NJ. Statistical analyses were performed by NJ and EK. All authors contributed to writing the manuscript. The authors read and approved the final manuscript.

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Competing interests
The authors declare that they have no competing interests.

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THE FUTURE IS HOPE

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Coastal fire burns 20 homes, forces evacuations in Laguna Niguel

By ERIC LICAS | Reporting out | CAITLIN ANTONIOU | Contributing out and ERIKA I. RITCHIE | Contributing out | Orange County Register

PUBLISHED: May 11, 2021 at 8:30 a.m. | UPDATED: May 12, 2021 at 7:13 a.m.

Heavy black smoke billows from a fire in the Coastal Fire in Laguna Niguel, Tue., in Wednesday, May 11, 2021. (Photo by Jeff Gritchen, Orange County Register)

UPDATE, Thursday, May 13: Click here for our most updated story: Coastal Fire holds at 200 acres overnight, containment uncertain after 20 plus homes burned.

A small wildfire that broke out Wednesday in hot and dry Laguna Niguel quickly grew to 200 acres in windy and dry conditions, burned about 20 homes and prompted the evacuation of nearby residences and a nursing home for elderly adults.

About 100 homes were preemptively in the path of the Coastal Fire, Orange County Chief Capt. Jeff Bowman said during a briefing at the scene. Residents of those homes were told to be ready to leave at a moment's notice, and 20 homes were ultimately evacuated, Bowman said. Residents of the Mountain Meadows and Rolling Hills Estates in Laguna Beach were advised to shelter in place.

1 of 8

Heavy black smoke billows from a fire in the Coastal Fire in Laguna Niguel, Tue., in Wednesday, May 11, 2021. (Photo by Jeff Gritchen, Orange County Register)

Coastal Fire Burns Laguna Niguel

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An animal evacuation assistance call Mission Viejo Animal Services at (949) 470-3045 - Ext 0

City of Laguna Niguel
@cityoflagunaniguel

Coastal Fire in Laguna Niguel

Orange County Fire Authority
Orange County Sheriff's Department

City of Laguna Niguel
City of Laguna Niguel

Fire fire was reported at 2:44 p.m. in Aliso Woods Canyon, near a water treatment facility, and it quickly grew to 200 acres, Bowman said. Around 4:30 p.m., the fire was 0% contained, and by 6:30 p.m. it was 5% contained, Bowman said. Flames had crossed at routes and had begun moving toward homes. The fire continued to spread and grew to consume about 250 acres by about 7:30 p.m., OCFA Chief Fire Marshal Jim Ruane said.

As the first homes began to burn, embers were cast into nearby crawlspace and attics, igniting more homes and creating a challenging situation for firefighters, Bowman said. Crews were also pursuing out of several houses that were consumed by the flames, he said.

Yellowjacket Towage broadcast fire from the scene. Yesterday, estimated 20 homes had been in the path of the fire and were evacuated as a precaution, Yellowjacket Towage reported on Twitter.

There were no reports of any injuries as of p.m., Kennedy said. Because of potential health risks, the Aliso Niguel Library was closed to the public, Kennedy said. Several [redacted] access advisory for parts of Orange County.

Laguna Niguel
@LagunaNiguel

Evacuations near Pacific Island Drive and Coronado Pointe. We need to evacuate as we have responded. Pets

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#CoastalFire destroys several homes along Aliso Summit Trail in Orange County. bit.ly/3hJ4Ucm

Replying to @knx1070

6:20 PM · May 11, 2021

Read 4 replies

Sue Price walked into the community center with help from her two neighbors, Celinda Garza and Sia Whitaker.

"The girls told me, 'We're going, and you're coming with us,'" Price, 85, said.

Then she pointed out a kitty in a carrier, Garza was carrying for her. "It was an orange and white cat, Oreo."

"I just got here for Mother's Day from my son," Price said. "I haven't even named her."

Garza said she was in the living room when the fire and the order to evacuate.

The limousine was among several dozen who had taken shelter at the community center. The Red Cross had set up cots, and Price was resting comfortably on one of them. Garza said she was also in the process of finding a hotel room for the night.

An OCFA Chopper was on hand to offer assistance to anyone who needed it.

Around dusk as crews battled the fire, OCFA Capt. Jeff Bowman said the fire department in Orange County were working into the night to extinguish the flames. Many will remain overnight to watch for hot spots and to make sure the fire doesn't reignite, Bowman said.

While growing up to 20 acres per hour burning the flames, and relative humidity in the area was measured at 15 percent, National Weather Service Meteorologist Scott Kroeger said.

"Gusts were up to 25 mph when the fire started," Bowie said at about 5 p.m. "It will stay breezy for the next hour or so, but should drop off as the sun descends behind the hills."

The winds that drove the fire were not especially strong, Kroeger said.

"The big difference is, we are seeing it again, drove, with the climate change," Kennedy said. "The fuel beds in this county, throughout Southern California, throughout the West are so dry. They're ready to burn. They're receptive to ignition. The parts are. To some caps, a fire like this is not unexpected."

Ready to evacuate

Back at the evacuation center on Crown Valley Parkway, Cheryl Hicks and her husband Mark were preparing to evacuate watching the news.

Their 40,000-square-foot home in Fairview, the neighborhood next to hard the Coronado Pointe.

Fred Wenger, mayor in 2020 immediately engaged and drove up and down the street, knocking on doors to warn residents. Hicks said. Wenger was also on hand to help her pack up her belongings.

Mark Hicks said he first became aware of the fire when he heard a tech overhead and then looked out the window. He saw the flames and the smoke and knew it was time to get out of the house.

Not long after, the couple got a knock at the door asking them to evacuate.

The couple made use of a dry-erase board to make a thank-you note for the firefighters and first responders.

Hicks' daughter, parents, hard the OCFA Chopper and the Orange County Sheriff's Department.

"We came here because we wanted to be where the information was," Cheryl Hicks said.

Erika Ritchie, a longtime resident of Laguna Niguel, was evacuating with her husband Dave.

"I didn't see smoke but I got a text on the door and it was the fire department. They said give me room to take a picture of my house and I'll be right out," she said.

Charlotte, who loves ponies, answered the dangers of living in what he called "the best place on earth."

"You see a fire like this and it goes by the brush and green brush," he said. "But it's not going to be a problem."

"People who live in brown canyons can't complain about the fire," he said.

Ritchie, Amanda Navarrete of Lake Forest was among many who fled by Coastal Drive when she noticed smoke billowing nearby. She was able to bypass an traffic on her bike before the fire reached her home, she said.

"I really hope that's not the Canyon," Navarrete said. "I finished the climb to the top of Pacific Island Drive and saw the crowd overlooking Aliso and knew it had to be down there."

Residents from Agua Hedi gave word on a link up to access the Aliso Niguel Library, starting at the Hicks, dark gray smoke. A few remarked how sad it was to see the plumes rising from what were once glamorous homes.

The cause of the fire was under investigation.

The next maps for it in the area was the Emerald Fire on Feb. 20. The earlier fires grew to about 200 acres before containment.

Staff writer Jason Wilson contributed to this story.

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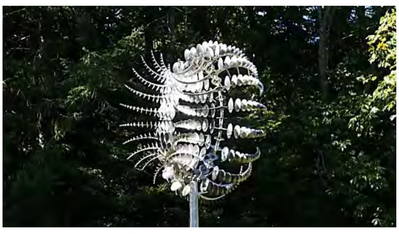

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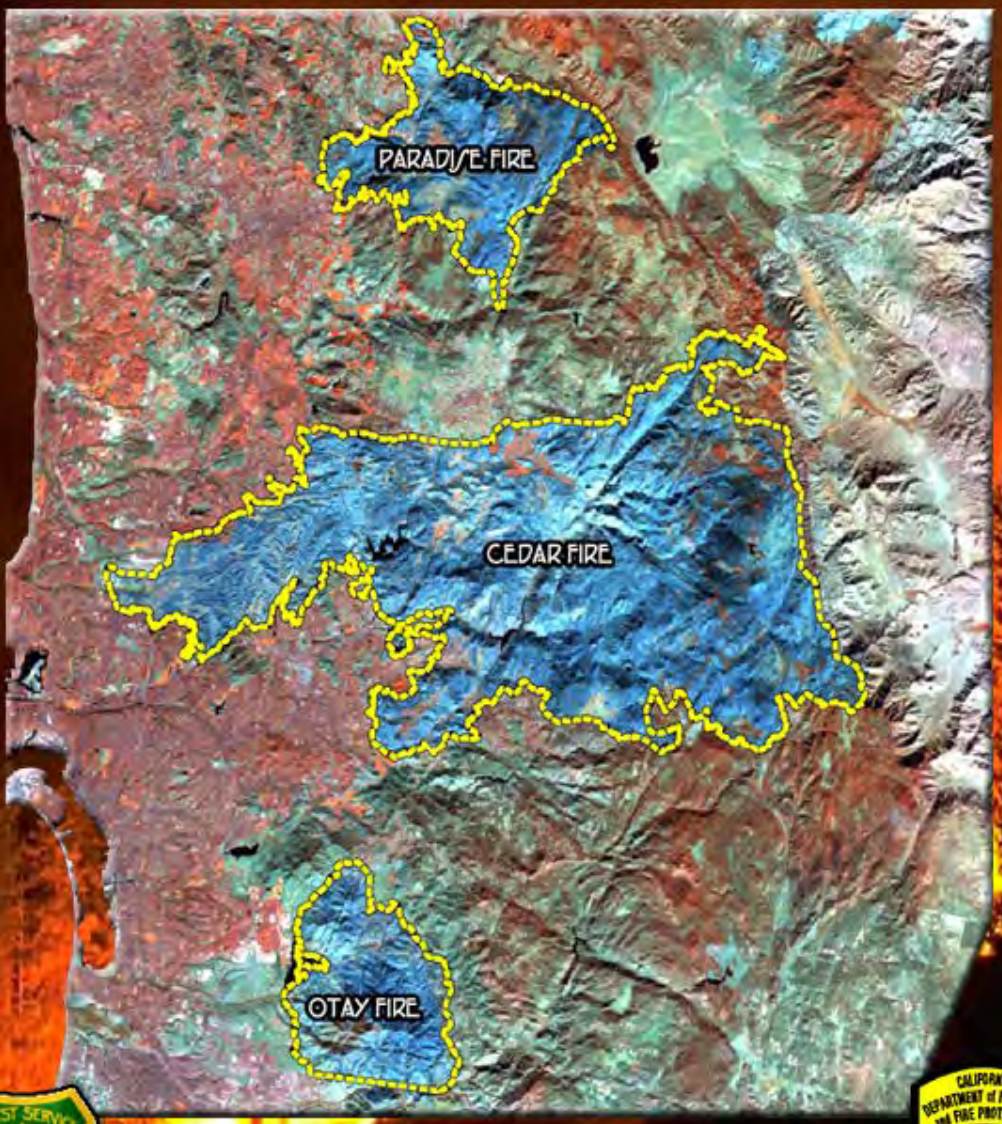
Figure 2. High density development in Coffey Park in prior to Tubbs Fire.

Figure 3. High density development in Coffey Park after Tubbs Fire.

Figure 4. High density development in the City of Ventura prior to Thomas Fire.

Figure 5. High-density development in the City of Ventura after Thomas Fire.

THE 2003 SAN DIEGO COUNTY FIRE SIEGE
FIRE SAFETY REVIEW



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I. Purpose

In late October of 2003, three major fires burned in San Diego County. Between October 25th and October 27th, 16 people lost their lives; 3241 structures[1] were destroyed, and suppression costs topped $43,000,000. The Cedar fire alone, at 273,246 acres, was the largest fire in California history.

The California Department of Forestry and Fire Protection, the Regional Forester, Pacific Southwest Region**,** United States Forest Service, and the Forest Supervisor, Cleveland National Forest authorized an interagency team of wildland fire experts to conduct a review of the management of the Cedar, Paradise, and Otay fires.

The following report was researched and written in mid-November through December 2003. Information for this assessment was derived from over 121 interviews with firefighters and support personnel from the Otay, Paradise, and Cedar fires, and incident documentation and reports, photos, maps, and other references.

This report documents issues, findings and recommendations from a stakeholder workshop held on November 20, 2003. The workshop was conducted to provide an interactive forum for all agencies and groups that took part in response actions related to the San Diego County incidents. Participants included personnel from city, County, State and Federal firefighting agencies, law enforcement personnel, CALTRANS, FEMA, and the United State Marine Corps. Discussions focused on interagency relationships, communications, aviation and ground safety, preparedness, community protection, and wildland fire resource issues. Discussion groups focused on what worked well within these areas, needed improvements, and recommendations for the future. Full documentation of the workshop may be found in Appendix A.

[1] This figure represents all structures including primary residences, commercial structures, and outbuildings.

II. Executive Summary

During the 2003 Southern California fire siege, the Cedar, Paradise and Otay fires burned 376,237 acres or over 13 percent of San Diego County's total land mass. When the fires were finally suppressed, 16 people had died, 3241 structures[2] were destroyed, and $43,230,826 had been spent for suppression in San Diego County.

Multiple high-acreage, high-hazard fires occurred within the Southern California area between October 21st and October 26th, 2003, straining local fire response resources and incident management coordination. During this period, 14 fires burned in six southern California counties, initiating one of the largest mobilizations of firefighting resources in State history.

The Cedar, Paradise and Otay fires started on October 25th and 26th. Extremely dry fuels, high winds, extreme erratic fire behavior and other factors made initial attack of these fires difficult and dangerous. Effective evacuation and protection actions on the part of emergency personnel, with cooperation by the public, saved thousands of lives. Loss of life and serious injuries did occur. However, in considering the circumstances of these fires, injury rates were surprisingly low. No aviation accidents occurred. Improved safety training and equipment is needed, particularly for law enforcement and other non-fire support personnel.

In initial and extended attack operations of the Cedar and Paradise fires, evacuation, suppression and aviation operations were conducted within a command system that was fractured due to difficulties with radio communications, the fast spread of fire through different jurisdictions, and rapidly changing operational priorities and tasks. Operational groups were sometimes isolated and this interfered with the implementation of the Incident Command System, but activities effectively focused on the primary operational goal of the protection of life.

A lack of formal operational agreements and consistent pre-season interagency coordination, integrated planning, and training within San Diego County caused a degree of disorganization in the management of the fires. Inconsistent or outdated policies among agencies also affected the overall efficiency of incident management, particularly in the area of aviation operations.

Interagency relationships, while cordial, lacked coordination, so information and intelligence did not flow effectively. Planning and logistics were in disarray for the first few operational periods, due in part to administrative difficulties with resource ordering systems, and to competing regional demands for fire suppression and support resources.

[2] This figure represents all structures including primary residences, commercial structures, and outbuildings.

The Incident Command System was effectively implemented on the fires, but more training on its functioning and use is needed, especially for agencies that do not routinely use the system for large-scale applications in concert with other cooperators.

Environmental, biological and social factors contributed to the fire's severity and effects, and both these categories require closer study. Fuels management in open space areas is needed. Comprehensive, consistent planning, building and zoning codes are necessary to mitigate hazards to communities in wildland-urban interface areas. Education of residents and support of community-based fire prevention and emergency planning efforts is essential. Unified interagency coordination with local media outlets will assist the efficient and accurate flow of information to the public.

III. Incident Events and Operations

"The 1970 fire disaster was unique in modern times, primarily in terms of the geographical area involved, total acreage burned, the wildland-urban nature of the fires, the large number of homes completely destroyed, and the large number of agencies, people, and equipment involved" -Excerpt, "Recommendations To Solve California's Wildland Fire Problem", Task Force on California's Wildland Fire Problem, 1972.

The San Diego County Fires

The Cedar incident was reported to the Monte Vista ECC at 1737 hours on October 25th, 2003. Thirteen civilians and one firefighter were killed. Ninety-one people were injured. Over 2,200 residences were destroyed.

The Paradise fire was reported October 26th at 0130 PST. Two persons were killed in this incident and seventeen people were injured. The fire consumed 56,700 acres, and destroyed 176 residences.

The Otay fire was reported on October 26th at 1300 hrs. This incident burned a significant area, with a final total of 46,291 acres. The fire was controlled fairly quickly, with no loss of life. One residence was destroyed, and one firefighter was injured.

The complexity of managing multiple, high-acreage, and high-hazard fires within a focused urban geographic area tested local fire and emergency response resources. It also showcased the talent, tenacity, initiative and unmatched firefighting and emergency operations savvy of the personnel involved with the management of these incidents.

Although just over 2,200 residences were lost, 13,000 homes were saved within the Cedar fire perimeter, and over 25,000 residences were saved within the secondary perimeter. This number of "saves" is significant in considering the Cedar fire was estimated to have consumed 5,000 acres per hour within a 40-hour period. (Cedar Fire Damage Inspection Narrative Draft)

Fire Weather and Climate Trends

The years between 1998 and 2003 had been unusually dry in Southern California. The region had received only 50-75% of normal rainfall in 2003, as averaged since 1895. No summer season storms occurred, and 2003 ranked in the bottom of the 5th percentile for rainfall over a 108 - year period. Autumn began with seasonably warm temperatures.

As in past years, seasonally occurring pressure gradients between the Great Basin to the east and the cool Pacific Ocean to the west initiated "Foehn" or Santa Ana wind conditions. The National Weather Service issued a Red Flag Warning for extreme southwestern California, forecasting sustained low relative

humidity persisting at less than 10%, for strong, persistent gusty Santa Ana winds, and poor evening humidity recovery through Monday afternoon, October 27th. When the east winds surfaced on late on October 25th, relative humidity plummeted to four percent at the Descanso remote automated weather station (RAWS), which is located on the Cleveland National Forest.

Fuel Conditions

Within the predominant vegetation types of the region – coastal sage scrub, chaparral, oak woodland and oak forest, and at higher elevations, pine forest, in higher elevations – live and dead fuels were critically dry.

Samples of chaparral taken on Poser Mountain, San Diego County, California, on October 7, 2003 measured at averages of 49 - 55% moistures for old and new growth, respectively. Nighttime fine dead fuel moisture declined to 4 percent, and was even lower during the daytime hours.

The severity of the fire potential was indicated by the National Fire Danger Rating System (NFDRS) indices such as Burning Index, Energy Release Component, and 1000 Hour Fuel Moisture levels. Definitions of these indices can be found in the Glossary.

- During the week of fires, the Burning Index (BI) for the Descanso Fire Weather Station was 250, setting a new historical maximum reading. This reading indicated potential flame lengths of approximately 25 feet in brush.

- The Energy Release Component (ERC) for the Descanso Fire Weather Station was over 120, also setting a new record high for this measure of fire hazard.

- The 1000-Hour dead fuel moisture was at eight percent, hovering at the historical driest level as measured at the Descanso RAWS.

Fire Activity in Southern California

Beginning 10/21/03, a series of large fires occurring in close geographic and chronological proximity critically stretched initial and extended attack resources and logistical support systems in Southern California.

A comprehensive timeline for the 2003 California Fire Siege can be referenced in *The California Fire Siege 2003, The Story* (California Department of Forestry; United States Forest Service, Pacific Southwest Region, 2003). The following discussion provides a summary of these regional incidents.

Between 10/21 at 1200 hrs and 10/25 0001, a total of 5 fires in San Bernardino, Los Angeles, and Ventura counties had burned at least 145, 279 acres, and the management of these incidents required a significant commitment of emergency

response resources: 6,305 firefighters, 535 engine companies, 196 hand crews, 37 helicopters, 66 bulldozers, 70 water tenders and 784 overhead personnel.

On 10/21, at 1201, the Roblar 2 fire was reported near the community of De Luz, in San Diego County. Many Federal, State and local government firefighting resources from northern San Diego County were assigned to the Roblar 2 fire, since they were the "closest resources."

A Red Flag warning was issued for 10/25 for very low humidity and Santa Ana winds in the southern California region.

On 10/25 at 0917, the Old fire began on the San Bernardino National Forest, threatening the communities of Crestline, Lake Arrowhead, and Running Springs and San Bernardino City. Later that day, at 1415 hours, the Simi incident, Ventura County, began.

The Cedar fire started on the Cleveland National Forest (CNF) on October 25th, at approximately 1737 hours

The Paradise fire started at approximately 0100 hours on October 26th.

The Otay fire started on October 26th.

The Cedar Fire

"Controlling a fire that starts in a wind affected area during the initial phase of a Santa Ana is an enormously difficult task…It is not unusual for a fully developed fire in chaparral to enlarge at the rate of 4 to 6 square miles per hour during the initial phase of a Santa Ana…Spot fires are numerous, sometimes up to a mile ahead of the main fire and occasionally as much as 4 miles." Excerpt- Can Southern California Wildland Conflagrations Be Stopped? 1970. USDA Technical Report PSW-7/1974.

Cedar Fire Initial Attack Chronology

October 25th

The Cedar fire started on the Cleveland National Forest (CNF) on October 25th prior to 1737 hours, the time it was first reported to Monte Vista Interagency Emergency Communications Center (ECC). It has been reported in the media that a lost hunter started the fire as a means to signal for help.

The Monte Vista ECC dispatched Cleveland National Forest (CNF) resources to the fire. The initial dispatch was CNF Division 3, CNF Battalion 33, 9 engines, 1 hand crew and two water tenders. It was followed immediately by the dispatch at 1740 hours, of Monte Vista Unit CDF resources to the same location: CDF Battalion 3312, CDF Battalion 3314, 5 engines, 2 hand crews, and 1 dozer.

Air attack 330, air tankers 70 and 71, and helicopter 406 were dispatched as well, but they could not respond to initial attack, since 1736 hours was aircraft "cutoff" – the point at which it is too late to dispatch aircraft due to impending nightfall, in accordance with Federal and State aviation policies.

At 1819 hours, CNF Division 3 requested an additional 15 crews, 2 Type 2 water tenders, and 1 Type 3 engine strike team.

Initial suppression efforts for the Cedar Fire were hampered by terrain, limited access, time of day and extreme fire behavior. The fire started on a knob in 30-year old chaparral in a remote area of the forest. The location of the fire origin is illustrated in Figure 1**.**

The exact location of the fire was not initially clear to the Incident Commander (IC), or the Operations Section Chief (OSC), who remotely scouted the fire from two different locations. A CDF Division Chief who viewed the area was located at the east end of San Diego Country Estates. The IC was located on the opposite side of the San Diego River at Boulder Creek Road. Both individuals surveying the fire could see smoke, but neither vantage point offered a direct view of the fire.

It was evident the fire was located in rugged, heavily vegetated terrain, with no roads in close proximity. Access to the origin of the fire was difficult, as the fire was located between the roads in the vicinity of the Cedar Creek drainage. There were no primary Forest Service roads in the area. Boulder Creek and Eagle Peak Roads are maintained by San Diego County, Cedar Creek Spur is a Forest Service fire road, and is rarely maintained. The only other roads in the vicinity were jeep trails on private lands, none of which could bring firefighters within one mile of the fire.

Fire personnel attempted to gain access to the fire from the south. Many of the roads were overgrown with vegetation, eroded, or too narrow to accommodate efficient and safe travel of fire apparatus. Attempting to navigate these roads put engines and crews in a precarious position, in the event that Santa Ana winds surfaced on the fire. After a few hours of attempting to gain access on these roads, it was determined too risky to continue with darkness falling and gusty winds imminent. All resources were ordered back to the initial attack Incident Command Post (ICP) by the OSC.

It was soon determined any travel to the fire would have to be made on foot. Rugged terrain, darkness and heavy fuels would make cross-country foot travel slow and hazardous. High winds were forecasted for the coming hours, and personnel did not know precisely where the fire was and could only reasonably guess its direction of travel and rate of spread. Spotting was likely, and crews could be trapped by fire with no safety zones. Weighing these factors, the IC

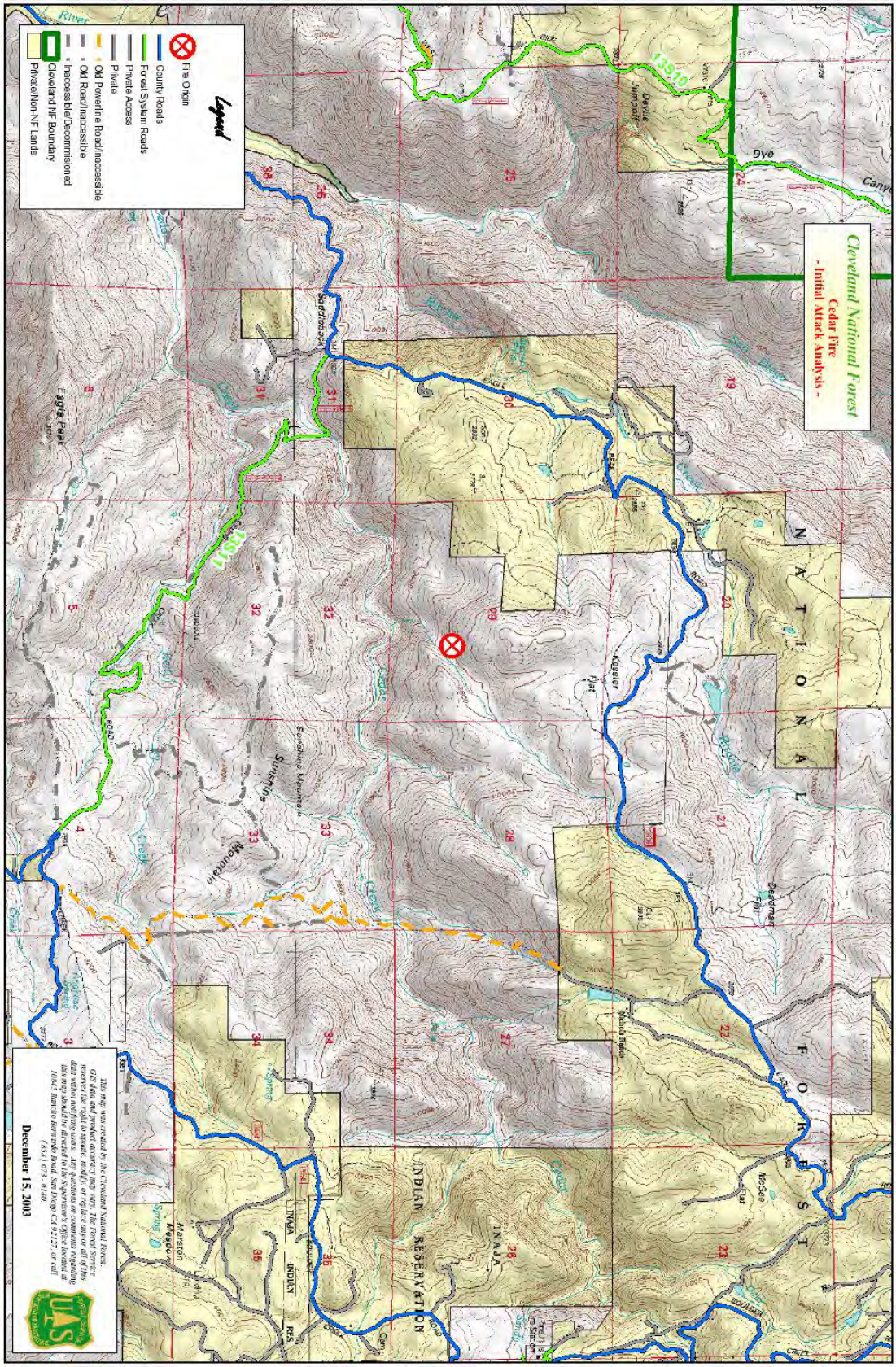


Figure 1: Cedar Fire Initial Attack Map

decided that attempting to access the fire by foot would pose an unacceptable level of risk to firefighters.

Within 90 minutes, Santa Ana winds pushed fire through the area firefighters would have hiked into had the decision been made to access the area on foot. Likewise, the narrow, steep roads firefighters had attempted to navigate had also burned over.

Fire Spread and Behavior Chronology

To estimate the Cedar fire's rate of spread, a number of sources help document how fast the fire moved, and the direction and shape of its forward and lateral spread. Figure 2 is a map showing the points and locations referred to in the narrative. A more detailed discussion of fire behavior is found in Appendix B.

Communication logs from CDF, the San Diego County Sheriff's Office (SDSO), and USFS were analyzed. There are few detailed entries in the dispatch logs that connect a location and a time to the fire's movement and provide a meaningful temporal and spatial connection.

The City of San Diego estimated fire event times by interviewing firefighters who were working at various locations on the fire. The City then created a map with points featuring this spatial information. These data were combined with the radio log points to estimate rates of spread.

Using satellite imagery, it is estimated the Cedar fire burned with a wind speed of over 15 miles an hour. The fire made a 29 mile run from approximately midnight of October 25th until 10:00 hours October 26th moving approximately three miles per hour.

The fire moved slowly from 17:37 to 23:00 hours. At 17:51 it was estimated by the San Diego Sheriff's Department helicopter pilot as 50 yards square (1/2 acre). It was described by a CDF Battalion Chief, located at the east end of the San Diego Country Estates, as approximately five acres. The Initial Attack IC, staged at Boulder Creek Road on the opposite side of the San Diego River, estimated the fire at 20-25 acres in size. Terrain and darkness influenced what each saw from their respective vantage point, so their initial estimates of the fire's size differed.

Excerpts from dispatch logs help link time and observed weather and fire behavior. At approximately 21:46 hours, Monte Vista ECC dispatchers received a report, "Winds are variable north, northeast, and east at nine to 26 miles per hour. The temperature is at 68. Relative humidity is at 11 percent. The dew point at 11 degrees. And also the fire just made a run to the top of the ridge."

Winds increased significantly in short order. At approximately 22:20 hours, winds were "… Out of north, northeast and east at 18 to 27, gusty to 37 miles per hour."

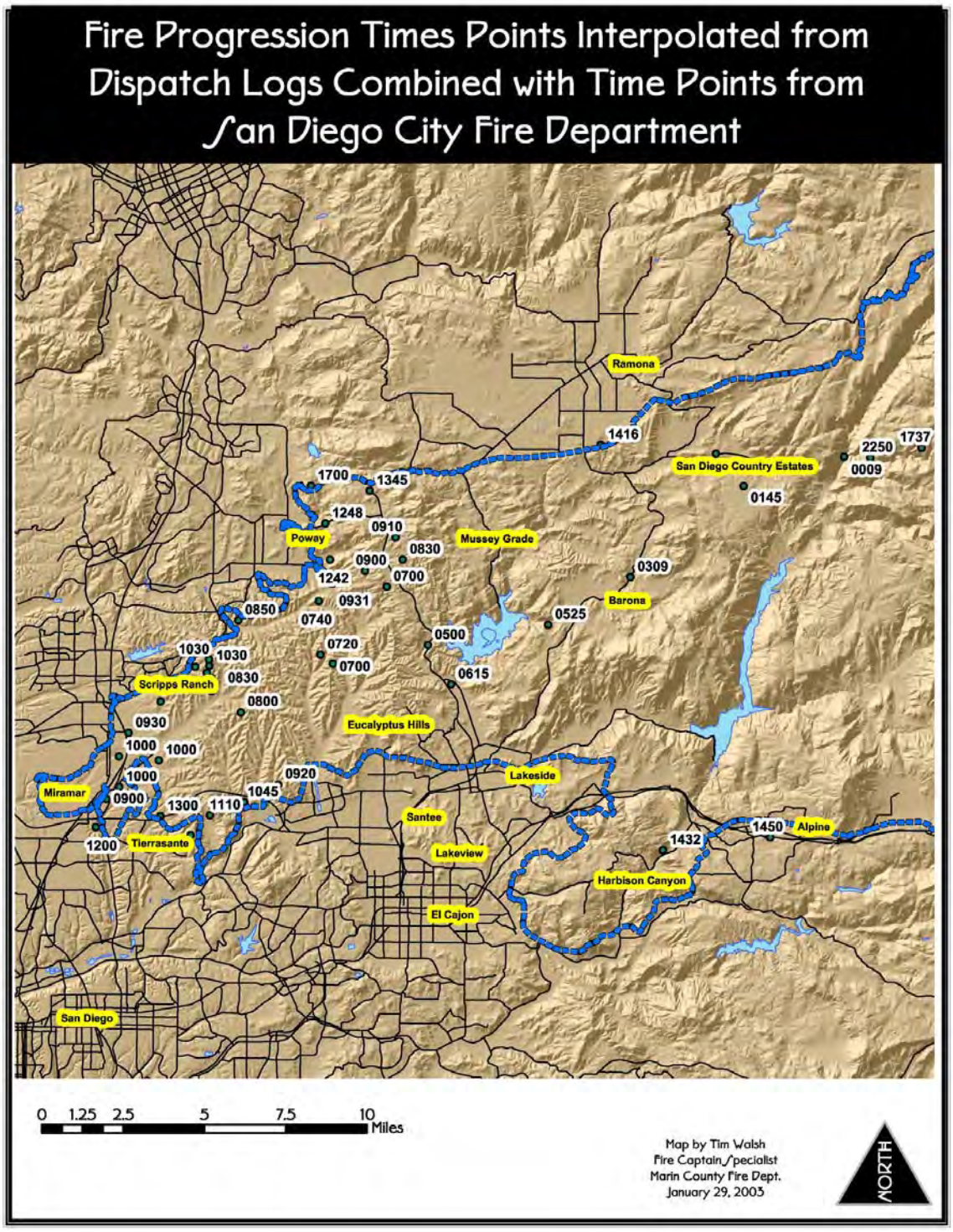


Figure 2: Cedar Fire Progression Map

At 22:50 hours the OSC reported “the fire has crossed Eagle Peak Road.” The fire began its spread into the San Diego River Drainage. The fire had moved 1.6 miles to the west-southwest.

The first reference to extreme fire behavior occurred at 23:18, when a CDF Battalion Chief described the fire from the east end of the San Diego Country Estates, “…I'm watchin' what I think are probably 75-foot flames right now just rollin' and we had probably about a 60 or 80 acre area ignition goin' about five minutes ago…. 100-foot flames now.”

Evacuation and ordering of structure protection resources through the OES Fire and Rescue Mutual Aid System (by 2100 on 10/25) proceeded promptly. This rapid response was important in saving lives and structures in the San Diego Country Estates, once the fire crossed the San Diego River.

The Forest Service and CDF initiated unified command at 2356 hours, October 25th, when the Cedar fire burned into the State Responsibility Area.

October 26th

At 00:09 hours, CNF Division 4 states, “Fire activity has increased…long range spotting and it has crossed the San Diego River.” The fire had moved almost a mile in forward spread.

Fire and law enforcement personnel underestimated the potential size and rate of spread of the Cedar Fire. Several communities (the Mussey Road area, Muth Valley and Barona Mesa Estates) received no notice of the approach of the fire. In many other cases citizens were evacuated on very short notice.

Many of the entries on the dispatch logs have no time stamp. The only time documented is when the tape that records conversations is changed. As the tape ended at 00:27 hours, a report is made “I got a spot fire now. It’s less than a half-mile away…. speed to these structures is increasing. We’ve got a pretty good fire activity now and it’s not laying down as much as before.”
Numerous spot fires, observed at over one-half mile ahead of the main fire, combined with erratic winds during the first night, caused extensive, unpredictable fire spread. These factors also contributed to entrapment of civilians and firefighters.

Prior to 0113 the Structure Branch Director stated, “This thing is progressing around the Ramona Oaks area quite rapidly. It’s starting to head from…, Barona Mesa, I’m moving some resources in there now.”

The fire moved through the Barona Indian Reservation. Firefighters established a roadblock at the top of Wildcat Canyon road to stop the flow of traffic into what was becoming an extremely hazardous area.

There were 1,000 people were in the Barona Valley Ranch Casino and 722 guests registered at the resort and hotel. Two hundred employees were on duty. The golf course provided a greenbelt which helped protect the structures and other property on the resort grounds. Guests were advised to remain at the resort, and this likely saved many lives. Security personnel at the Resort assisted fire and law enforcement personnel with protecting patrons sheltering in the Casino. Had resort patrons attempted to evacuate the area by car, many would likely have been trapped by fire on Wildcat Canyon Road.

At 0116 CNF Dispatch received a report of a Sheriff Officer trapped in a burning building on Matlin Road. The fire had traveled west another two miles from the San Diego River bottom to Matlin Road in approximately one hour.

Wind speeds and erratic gusts continued to increase. Prior to 01:30 hours, an unknown voice, probably a lookout, reported to CNF Dispatch, "Winds still out of the northeast to east, northeast at, but they're up 25 to 40 miles per hours with 53 miles per hour. Temperature is at 66. Humidity is at 11 percent. Dew point is at nine degrees."

At 01:45 hours, the sheriff's dispatch log states the fire had jumped Rancho Barona Road. The fire had moved over 1 mile to the west-southwest in 30 minutes.

At 02:25 hours, the CNF dispatch log states that an elderly couple was trapped at on Albana St. The fire had grown another 1.3 miles, predominantly to the north, indicating the fire's lateral growth.

The Cedar Fire reached the Lakeside jurisdiction at 0300 on October 26th.

At 0309 hours, there was a report from the sheriff's office of four people trapped on Wildcat Canyon Road. The fire spread about 4.4 miles in 44 minutes.

The fire reached Poway at 0500, and burned 54 homes and 16 businesses.

The fire moved to the west 3.7 miles, reaching Highway 67. The fire hit Scripps Ranch at approximately 08:30. It continued to spread to the west, reaching Highway 15 at approximately 10:00 hours. The fire reached Tierrasante by 13:00.

The CNF dispatch log states that units were trapped on Mussey Grade at 1404 hours. At 1416 hours, a house was burning on Gem Lane, which is just south of Ramona. At 14:32, there was a "½ mile fire heading towards Harbison Canyon." By 14:50 it was "hitting Alpine heavy."

October 27th

The first sign of diminishing Santa Ana winds came during the late afternoon. On October 27th at 2000 hours the Julian RAWS recorded winds with a westerly

component blowing from the south-southwest at 1-2 mph. At the Descanso RAWS, the wind blew from the west-southwest at 18:30 hours at 0 mph with gusts recorded at 7 mph.

October 28th
The Cedar fire first entered the community of Julian on October 28th.

October 28th was a day of transitional winds. Winds were westerly at 4-8 mph with gusts at 10-12 mph from the Descanso RAWS. Throughout the day, the fire continued to burn to the east, into higher elevation conifer stands. Groves of insect-killed pines burned with high intensities and lofted embers further east. With the westerly winds, the fire aligned toward North and Middle Peaks, making upslope runs and spotting during the early morning hours. Prior to 09:00[3] hours, the fire was backing down the eastern slopes of North, Middle and Cuyamaca Peaks.

By sundown, the fire destroyed several structures in the community of Cuyamaca, By 20:39 hours, the fire destroyed structures in the Harrison Park area, temporarily trapping a structure protection group. The fire had crossed the Sunrise Highway by 21:00 hours, and was moving towards the La Cima Conservation Camp.

October 29th
The fire continued movement to the east. By 0317 on October 29th the fire was spotting into the community of Kentwood-in-the-Pines, southeast of Julian. As the fire spread east of Kentwood-in-the-Pines, it burned into the edge of the July 2002 Pines fire, where fuels were greatly reduced. Most of the eastern edge of the Cedar fire joins the western edge of the Pines fire.

A strong westerly wind flowed over and through the San Diego River Drainage throughout the day. The winds funneled up the river and the fire spread into the community of Wynola. The Julian RAWS recorded winds at 9-17 mph with gusts at 16-30 mph between 0610 and 1210 hours. The fire spread to the northeast, killing a firefighter and destroying more structures. By 1610 hours, humidity increased to 50 percent, by 1810 to 80 percent, and by 2110 hours, it reached total saturation of 100 percent.

October 30th-November 4th
The air remained saturated with measurable rain falling by 0610 hours on November 1st at the Julian RAWS.

The maximum number of engines committed to the Cedar Fire was 722 November 1st-4th.

[3] Temporal and spatial fire location relationships extracted from Division Chief Randy Lyle's narrative.

Command and Operations on the Cedar Fire

As the Cedar fire quickly escalated from a wildland fire to a wildland–urban interface fire, assigned leadership roles overlapped and were adjusted by necessity.

The OSC on the Cedar fire was assigned to develop plans for fire suppression actions on the east side of the San Diego River Drainage on October 25th. He coordinated forces that worked to secure the east side of the fire as fully as possible before the off-shore Santa Ana winds diminished and the on-shore winds began. Timing was particularly critical, since on-shore winds would likely push the fire north and east, into the areas between Julian, Pine Hills and Cuyamuca Lake.

As the fire began to expand with a high rate of spread and pushed down the San Diego Drainage and across the San Vincente Drainage, it entered multiple jurisdictions, adding further complexity to the incident. The Structure Branch Director (SBD), who normally has the responsibility to plan the protection of structures, was assigned duties for supervision and coordination of structure groups.

The decision to use the OSC on the east side of the San Diego River placed a heavier burden on the ICs and the Structure Branch Director. It further complicated the job of the Unified Commanders, as they took on the responsibility for developing suppression actions and contingency plans, along with their respective command responsibilities. Even though the firefighters on the ground were well coordinated at the Branch and the Division/Group level, it had an impact on the overall command and control of the incident for about 36 hours.

In the first 36 hours of the fire, suppression and evacuation efforts were heavily dependent on local knowledge. Local Chief fire officers are essential to effective initial attack, since they have knowledge of the local area and available firefighting resources. CNF Chief fire officers were reassigned to other fires in the Southern California region during this critical time. Both the Cedar fire IC and Division Chief (both CNF employees) are members of a Federal Incident Management Team. The Division Chief was IC for the team. In the late hours of October 25th, the Federal Cedar fire IC and a Division Chief were advised their team was mobilizing to manage the Old Fire. Other CNF Chief Officers had already been assigned to the numerous other fires in progress throughout the region. CNF and the GACC filled the order for the two team members, even in light of difficult local circumstances.

Later, as teams transitioned in other areas, some CNF Chief Officers were released or demobilized and became either assigned or engaged as structure groups on the incident within their own jurisdictional areas. CNF did not go below established “drawdown” levels prior to the start of the Cedar fire.

Firefighting resources functioned well independently, but fractured groups of resources impacted the effectiveness of overall command. As the incident's complexity grew, resources focused on individual area-specific tasks, which reflect protection of life as the highest priority. Communications did not flow between functional groups as they normally would have due to the rapidly evolving nature of the events.

As the fire progressed into additional jurisdictions, fire departments responded to the approaching fire front, increasing the fragmentation of operations. Some jurisdictions, including Miramar and San Diego City, initiated scouting and field observers. With the fast spread rate of the fire, other jurisdictions had little or no advance warning the fire was approaching.

The commitment of resources to structure protection and evacuation actions limited firefighting resources for perimeter control. Although perimeter control operations were sometimes uncoordinated, they were effective in many areas. For example, line was constructed and held in Poway and Julian, among other successes. Burnout operations were not always coordinated with adjoining forces because of radio communications problems.

Some structures were lost as a result of secondary ignition. Structures do not always ignite as the main fire passes, because its duration is relatively short and not always of sufficient intensity to initiate combustion. Often, airborne glowing embers accumulate on combustible areas of the structure, such as a wood shake roof, or on adjacent fences or furniture. Sustained heat from the glowing embers ignites these surfaces and spreads fire to the building. Firefighters were not always patrolling previously burned areas for secondary ignitions, as they often can do in other situations, as they were involved with urgent evacuation operations.

As the fire moved beyond the scope of incident command and control and progressed through multiple jurisdictions, assignments of local fire departments were tasked as organizational components (Branches and Structure Groups).

Radio communications problems exacerbated fragmentation of suppression operations efforts. Specific discussion on radio communications can be found in the radio communications section.

Two teams, one State Incident Command Team (CDF ICT 5) and the Federal Pacific Northwest Incident Management Team 2 (IMT 2), were assigned to the Cedar fire. CDF Team 5 transitioned in on October 26th and received a transition briefing from CDF Chiefs Maner and Barta at 1700. They assumed command of the Cedar Fire on October 27th at 0700 hours.

IMT 2 transitioned in on October 28th at 1400 with a briefing presented by Chief Hawkins and Forest Supervisor Fege. IMT 2 assumed command of Cedar East on October 30th at 0700 hours after the fire was zoned into Cedar East and Cedar West. The two IC's on the Cedar incident coordinated effectively and held twice-daily meetings. Planning proceeded well, with plans issued by operational period #2.

Planning and Logistics on the Cedar Fire
Planning, intelligence, logistics were in disarray for the first 72 hours of the Cedar Incident.

- Many resources on the Cedar Fire were unaware of the location of the Incident Command Post (ICP).
- Many resources on the Cedar Fire did not receive briefings from the team for the first 2 operational periods.
- When Incident Action Plans (IAPs) arrived at the line, they had little relationship to operations or distribution of resources on the ground. Resources did not always check in to the Incident Command Post and instead proceeded directly to the line, so their whereabouts were not known or documented on the IAP. Resources working within quickly evolving circumstances often changed their locations and activities based on immediate needs and changing priorities.
- Many resources on the Cedar fire did not receive relief or logistical support for the first 72 hours of the incident (food, fuel and supplies were acquired on their own or were provided by local citizens, departments, agencies, groups or vendors).
- The first IAP was produced on the morning of October 27th. However, many resources, assisting agencies and dispatch centers on the Cedar Fire went without an Incident Action Plan for 72 hours.
- During the initial stages (36-48 hours) of the Cedar Fire, in absence of organized operational briefings safety messages/briefings occurred between units at the Division/Group level down. In some cases, this information was provided over the radio.
- Once the first team was assigned to the Cedar Fire, the initial communication plan was not disseminated to ground resources.

Evacuation on the Cedar Fire
The Cedar fire quickly evolved into a wildland-urban interface conflagration. In a short time neighborhoods were threatened, and loss of human life went from a possibility to a reality. Operational priorities shifted to the protection of civilian lives and absorbed all available firefighting and law enforcement resources.

Evacuation notification to residents was issued primarily by door-to-door contact, or via loudspeakers on emergency vehicles. San Diego County utilizes the emergency broadcast system, but it was not activated as its use was deemed impractical at that time. The television notification system accommodates only a

limited number of characters. Since the fire was moving quickly, it was not possible to compose a message that would be applicable to all areas affected by the fire at the time. Messages would be inaccurate or untimely in a brief period, perhaps by the time the message was actually displayed. Given the late hour, after 0001 hours, it was likely few people were watching television.

Non-fire cooperators played an essential support role in evacuations. The American Red Cross did an outstanding job in their support function with 5,029 volunteers providing shelter support and assistance to displaced residents. The Red Cross established 12 shelters to aid residents during the incident. Four shelters had to be relocated when they were threatened by approaching fire.

A coordinated effort by San Diego County Animal Control staff and trained volunteers rescued over 3500 horses and 500 domestic animals. Animal rescues occurred during active firefighting, evacuation and civilian rescue operations and were coordinated through the Sheriff's Department. Animal rescuers set up their own shelters and utilized the 800 MHZ system for communications.

American Medical Response mobilized additional ambulances from outside the San Diego area. This relieved fire apparatus from EMS responsibilities and enabled them to resume firefighting operations.

The Paradise Fire

Initial Attack Chronology

October 26th

Initial attack resources were first dispatched to the Paradise fire at 0130 hours on October 26th. According to dispatch logs, a resident may have reported the fire prior to 2330 hours. Dispatchers believed this caller was viewing the Cedar fire, not reporting a new fire.

Another caller advised the fire was just south of the Harrah's casino on the Rincon Indian Reservation, within State Direct Protection Area (DPA). The first alarm dispatched closest resources including seven engines, a truck company, a medic unit, a local government Fire Chief, and one CDF Battalion Chief.

The recorded temperature at 0100 hours was 78 degrees. Relative humidity was under 10%. East winds blew at 35 miles per hour, with gusts to 45.

The first unit on scene, CDF Engine 3377 (E-3377), reported fire on both sides of Valley Center Road. The fire was burning on a mild slope just off Valley Center Road.

E3377 also reported that two houses were on fire, and that ten to fifteen acres were burning westward up a 30% slope toward Yellow Brick Road. E-3377 ordered an immediate need, closest resource strike team of engines. The five

engines still en route to the initial dispatch were diverted to the Yellow Brick Road area.

Battalion Chief 3317 (B3317) arrived at 0210 hours and assumed Incident Command. He ordered additional overhead, engines, crews and dozers. Because of limited resource availability, Monte Vista ECC could only provide two Type III engine strike teams, one Type I hand crew, and one Division Supervisor. Obtaining additional resources would require a request for assistance outside the local area.

The fire continued to move west with spotting of up to one-quarter mile ahead of the main fire. By 0230 hours, the fire was over 500 acres and growing rapidly.

The IC identified evacuation and rescue as the top priority, and perimeter control as second. The fire was to be kept east of Cole Grade Road, south of Pauma Heights Road, north of Fruitvale Road, and west of the Paradise Creek Drainage and the slope of Rodriguez Mountain.

At 0300, the IC conferred with CDF D3307 and CDF C3301. They ordered an additional 8 strike teams of Type III engines, 6 strike teams of hand crews, 4 strike teams of dozers, and 12 overhead positions.

The Paradise fire had serious potential. Based on the acreage of the first few hours, they estimated the fire would burn 10,000 acres within the first operational period. If the prevailing winds continued, it was expected the fire would move west into the Keys Creek Drainage, with spread to Hellhole Canyon and Rodriguez Mountain, also all within the first operational period. They ordered an Incident Command Team.

As on the Cedar fire, fuels were extremely dry. Heavy accumulations of drought and insect-killed brush and trees covered open areas. Major watershed areas and valuable agricultural resources including expansive citrus and avocado groves were at risk. Two major casinos in the area were crowded with patrons and guests, making evacuations difficult.

Predominantly, homes in the area were located on lots an acre or more in size. Over half the homes and associated outbuildings had less than the required 30 feet of vegetation clearance around their perimeters. Liquid pressurized gas (LPG) tanks were exposed.

After 0300, perimeter control efforts were initiated on the northeast section of the fire, and crews were able to provide a holding line from Valley Center Road to Rim of the Valley Road. Progressive hose lays and firing activities were employed successfully at the reservoir near the Miller Road extension between Paso Robles Road and Villa Sierra Road, and the forward spread of the fire was stopped temporarily.

Fire funneled through narrow drainages, pushed by the gusting winds, and structure losses continued. The engine companies were then directed to initiate direct suppression as the priority operation.

Fire Spread and Behavior Chronology
At 0600, conditions worsened as winds increased dramatically. The Operations Sections Chief redirected four engines to attempt to hold the fire from entering the Paradise Creek Drainage and moving upslope to the south. The units were in place and direct suppression efforts underway when the fire extended into the San Luis Rey Drainage, moving upslope to Rodriguez Mountain. Fire behavior was extreme, and surface fire flame lengths of up to 50 feet were observed. In brush stands where fuel was 20 to 30 feet high, flame lengths reached 100 feet or more.

A firestorm developed and moved south as 70 mph winds surfaced. The four engines evacuated the area and proceeded back to Valley Center Road and the North Lake Wohlford Road area. Sixty citizens were trapped by fire as they evacuated in vehicles. Engines provided protection as the fire passed. The firestorm progressed for nearly 20 minutes, cutting visibility to only a few feet. All resources were directed to North Lake Wohlford Road to rescue and protect people in that area. Spot fires developed over one mile ahead of the main fire.

Fire had spread in the upper Hell Creek area, the base of Paradise Mountain, Canal Road, and Bear Ridge, south of Woods Valley. Spot fires were reported on Guejito Road near Lake Wohlford, and in the vicinity of the Lake Wohlford Resort.

Suppression and Evacuation Operations
Several strike teams of engines arrived in the early morning hours and were directed to the Paradise Mountain area. Sunrise brought major runs to the south, up the main drainages.

Structure protection groups were assembled: the Cool Valley Group, Paradise Mountain Group, Woods Valley Groups, Fruitvale Group, Guejito Group, Hellhole Group, North Wohlford Group, and the Wohlford Resort Group. The fire moved faster than evacuations could by conducted for a few hours. Structure protection and evacuation activities continued throughout the day. Reduced wind speed combined with previously burned areas of lighter fuels may have helped limit fire spread and aided firefighting efforts.

CDF Team one assumed command of the Paradise fire on October 26th at 1400 hours. Twenty-four hour operational periods were established, and this staffing schedule worked very well.

The Santa Ana winds subsided on the evening of October 26.

October 27th
The first IAP (Incident Action Plan) was issued on October 27th. The IAP contained objectives reflecting the overall incident strategy and specific control objectives for the next operational period.

Evacuation operations were well-organized for Mt., Palomar, as evacuation plans had been pre-established for Palomar Mountain.

Significant damage to agricultural resources occurred, with losses estimated at 24 million dollars.

Direct mobilization of Fire and Law Enforcement resources from the Roblar 2 Fire to Paradise fire was a very important factor in gaining control of the incident, as was pre-staging of Incident Command Teams. The Operation Area Coordinator moved fire resources within the operational area to meet emergency needs.

The Otay Fire

The Otay fire started on October 26. Its cause is under investigation. The Otay fire was managed by a CDF Type III IC with supporting firefighters and equipment.

According to Mexican authorities (CONAFOR, Proteccion Civil de Baja California) on October 26, 2003, the Otay fire crossed the border sometime between 11:00 and 14:00 and burned 1822 acres in Mexico.

The fire burned in medium to heavy chaparral. A successful burnout operation was conducted from a fuel break completed 30 days before the fire along Proctor Valley Road. This fuel break was funded by a National Fire Plan Grant, administered by the US Fish and Wildlife Service (USFWS), and constructed by the San Diego Rural Fire Department and the USFWS.

No communities were evacuated during the Otay fire. One residence and five structures were lost. Several outbuildings were destroyed in Mexico. One hundred thirty-eight firefighters were assigned at the peak of fire operations, but the fire was successfully contained and most resources were released by October 28th.

IV. Incident Safety

> "In November, 1966 the Loop fire started near the City of Los Angeles and spread over 2,028 acres of valuable watershed area in 32 hours; in just one minute of that period, the fire flashed up a narrow canyon and killed 12 experienced firefighters." Excerpt - ***"Recommendations to Solve California's Wildland Fire Problem", Task Force on California's Wildland Fire Problem, 1972.***

While post-incident review of matters such as operations, strategy, coordination, planning and policy are valuable, assessment of incident safety is absolutely essential. The safety and well-being of the public, firefighters, law enforcement, medical personnel and all others involved in emergency operations is, and always will be, of foremost importance. Accordingly, this discussion is presented first.

Summary

After 34 wildland firefighters lost their lives during the 1994 fire season, the five Federal wildland fire agencies critically reviewed Federal fire management policies and programs. Chief among their findings: the first priority in wildland fire management is the protection of life.

Accident and injury rates were surprisingly low for all personnel involved with the San Diego County fires, given the extreme fire behavior, complexity of the incidents, exceedingly long work hours, and sometimes fragmented nature of the operations structure. This is attributable to many factors, but it is primarily because safety is an integral, repetitive, and systematic part of regular training and daily fire service operations. At least two dozen civilians sustained injuries, but again, considering the scope and severity of the fires, these numbers are relatively modest.

In no way should these statements be construed to diminish the tragic loss of life and serious injury that occurred. Specific discussion of civilian and firefighter fatalities related to the Paradise and Cedar incidents is outside of the scope of this report. Investigation and review of those incidents is being conducted separately. It is important to establish, however, that due to quick and effective actions on the part of emergency personnel, and a high degree of public cooperation, thousands of lives were saved.

Potentially, more injuries and fatalities could have occurred. Evacuations and fire suppression operations were conducted under extremely difficult circumstances. While operations were generally safe, some responders did not have adequate safety equipment or training for incidents of this type. Communications and coordination difficulties compromised safety.

Safety Findings

Accident and injury rates were exceedingly low for all personnel, given the extreme fire behavior and complexity of the incidents. The skill, experience and management capabilities of personnel at the Division / Group level were significant factors in the prevention of mishaps.

Training and Qualifications

Non-fire personnel, including law enforcement, San Diego County Animal Control, the American Red Cross, and CALTRANS were instrumental in the success of incident operations. They were sometimes exposed to unsafe conditions for which they were not fully equipped or trained. Some did not have enough experience with large-scale wildfire operations to perceive the high level of risk associated with operations under the extreme fire conditions prevalent on the San Diego fires.

- Some deputies proceeded into areas that fire personnel had chosen to withdraw from, because conditions were deemed as unsafe.
- Law enforcement personnel and citizens drove though actively burning fire areas to reach evacuation centers.
- Law enforcement personnel implemented evacuations and road closures without adequate fire line safety training or essential personal protective equipment.

When the fire situation exceeded experience and training levels of structural companies and strike team leaders, they disengaged as a safety measure. Wildland firefighting and structure firefighting are distinct professional specialties. Federal wildland fire agencies receive intensive training in wildland and wildland-urban interface fire suppression, since such operations comprise the bulk of their duties. Local fire departments are primarily trained in structure suppression. CDF receives training in both areas. Each specialty has its own techniques, equipment and associated hazards. Consequently, local structure firefighters may not have a thorough understanding of wildland fire suppression tactics or safety; Federal wildland firefighters are not thoroughly versed in structure operations.

In North County, wildland fire training conducted prior to fire season for local government fire departments proved to be valuable. Firefighters learned important structure protection skills for use in wildland fire scenarios. The Camp Pendleton Fire School provided useful instruction and drills. Local training with simulations for the Hwy 67 Corridor was also well received. Joint training with Federal, State and local departments, hosted by the Lakeside fire department, proved to be useful as well.

There are differences between helibase management qualifications and certifications in CDF and the Forest Service. This caused issues related to the qualifications of contracted helibase managers.

Evacuations
Law enforcement personnel were valuable players in emergency response operations in the face a crushing workload, rapidly shifting priorities, and dangerous, stressful circumstances. Staffing shortages occurred at SDSO substations.

In effecting evacuations, firefighters and law enforcement personnel conveyed potential life threatening consequences in an honest and effective way to residents. Rural residents who had experienced fires in the past took the initiative to evacuate the area, and took time to notify and assist their neighbors in evacuating. Others sheltered in place, and successfully defended their homes, often at great personal risk.

Incomplete or inconsistent communications between the Incident Command Post (ICP), law enforcement and firefighters caused uncertainty over evacuation areas and priorities. Officers were uncertain as to which areas had been evacuated, or those which needed to be either evacuated or closed. They did not always know the locations of shelters.

- In some cases, Fire or Law Enforcement personnel initiated evacuations at the Group level, rather than at the Branch level or above. In the fast-paced evacuation operation necessitated by the extreme conditions, these local independent actions saved lives. Real-time information regarding ongoing evacuation was not always communicated appropriately up through the chain-of-command, however, which caused some confusion.
- A similar lack of coordination and communication caused significant misunderstandings specific to road closures, area access restrictions, and authorizations for re-entry.
- No criteria for re-opening of roads or evacuated areas were issued.

Address numbers of many homes, particularly in rural areas, were either absent, not readily visible, or not adequate in size to be easily recognized by emergency response personnel. Identifying the access points to homes was also difficult in many situations, because the address marker was not always placed near the actual access point for the residence.

No pre-planned protocols or standards were established for flagging use or structure triage. Flagging is used by firefighters and law enforcement personnel to mark particular areas. Different flagging colors convey signals to other personnel (structure searched, not searched, civilians remaining, foam treated, fatalities, and evidence). Firefighters developed individual structure triage and flagging procedures during fire operations because of lack of preplanned protocols.

Emergency services personnel do not carry a comprehensive set of maps that cover unincorporated areas of the County. The maps that are used do not always

include all existing roads, particularly in the rural portions of the County or newer developments.

Radio Communications

Radio systems used by Federal and State agencies are incompatible with radio systems used by local fire departments, law enforcement agencies and animal control units. Incompatible communications systems caused a lack of coordination and poor information exchange. Response to real-time critical situations, coordination of evacuation operations, and timely filling of resource orders were all adversely affected.

Radio communications on the Cedar, Paradise and Otay fires were adversely affected by a number of factors:

- Traffic from international non-fire frequency users interfered with incident operations use.
- Federal and State agencies utilize Very High Frequency (VHF) frequency radio systems. Local fire and law enforcement agencies increasingly utilize 800 megahertz (MHZ) radio systems. Heavy use of the 800 MHZ system causes “busy outs”, effectively shutting the system down temporarily.
- Extended use of the Forest net as the Command Net on the Cedar Fire (8 days) adversely impacted both the ECC and communication capacity of the incident.
- Some repeaters on the CNF Forest Net had no fireproofing or vaults and were burned over. The CNF radio system infrastructure was in marginal repair before the fires started. Some repeaters had either not been installed or were not operational.

Effective management of emergency incidents depends heavily on functional radio communications. The “California Fire Assistance Agreement” States that each Strike Team/ Task Force Leader must be equipped with a VHF radio with a minimum of 32 channels. (Statewide Frequency Plan as published in ICS 420-1, Fire Service Field Operations Guide).

It is the responsibility of the jurisdiction sending apparatus to ensure that they have common communications capability with the Strike Team/Task Force Leader, but often apparatus were not equipped with compatible communications.

Local ground units entering into another agency jurisdiction were unable to reprogram radios (mobiles, handhelds and units from the cache) on the fire ground during initial attack. Recent changes in State policy have eliminated options for CDF resources to re-program radios.

In some cases poor radio communications with structure engines and strike teams impeded the ability of the wildland agency resources to coordinate

structure protection actions. When available and appropriate, “runners” were used as a substitute for radio communication.

Personnel utilized cellular phones to augment the poorly functioning radio system. Heavy levels of cellular phone use by both emergency personnel and the public overloaded the system, causing outages.

Several significant events highlight aviation communications deficiencies, including problems specific to breaches of the “virtual fence” between Cedar east and Cedar west; intrusion into the Presidential TFR by aircraft not compliant with pre-specified procedures; and termination of the incident TFR for Cedar east, Cedar west, and Paradise without coordination and adequate notification among the respective Air Operations Branch Directors (AOBD’s).

The initial attack pre-assigned air- to- air FM frequency was clear and effective. However, the new frequencies that were assigned for extended attack had numerous problems with interference from other non-fire frequency users, including international entities.

Thirty Mile Abatement Plan

Not all requirements of the “Thirty Mile Abatement” Plan could be implemented during the fires in San Diego County due to the imminent threat to life and property and the rate of fire spread. The Thirty Mile Abatement Plan was developed as a result of the safety review of the fatalities and injuries that occurred in July, 2001 on a wildland fire in Eastern Washington State. The requirements include such elements as fire entrapment training, the issuance of pocket cards, and stringent work/rest guidelines. The US Forest Service is the only California fire agency to fully adopt these requirements thus far. Their implementation has proved difficult on fires managed under unified command or within multiple jurisdictions where resources are committed from different agencies.

Work / Rest Ratios

Work hours among firefighters were excessive, particularly during the first 72 hours of the Cedar fire. Because civilian lives had been lost early in the incident, the Cedar IC directed firefighters to continue assisting the San Diego County Sheriff’s office with evacuation operations. Most firefighters on the Cedar fire worked 60-72 hours straight between October 26th and October 28th. By the morning of October 28th, sufficient resources had arrived to relieve firefighters, and evacuation operations were largely completed. At that time, firefighters were relieved of their duties for rest.

In spite of the long shifts, personnel managed fatigue in an effective manner. They monitored themselves and their co-workers for signs of fatigue, and implemented rest periods and breaks.

Weather Forecasts
National Weather Service forecasts and predictive services products were very accurate. Very few spot weather forecasts were requested. A fire weather meteorologist was requested by the team and arrived October 29th.

Airspace Management
Airspace was generally managed safely and efficiently**.** Management of air space over fire incidents in close proximity is complex. Monitoring and coordination of these aviation resources within the congested southern California airspace, particularly within the region of major airports and military facilities, requires a high level of technical skill and experience. Air space coordination was generally very good, with dedicated airspace coordinators and FAA representatives on scene. A few significant problems did occur, however.

"Virtual Fence" violations occurred repeatedly on the Cedar fire. The Cedar fire was zoned into two parts: Cedar east and Cedar west. Zoning is a fairly routine strategy implemented by the Forest Service to divide a large fire up into smaller, separately managed areas. A "virtual fence", or landmark, was established to separate the two airspaces. This boundary between the zones improves aviation safety and permits the two areas to perform independently managed aviation operations.

The virtual fence between Paradise and Cedar was Highway 78, which worked well by most accounts. The virtual fence between Cedar East and Cedar west (the San Diego River Canyon) did not function as well, with numerous intrusions. In some cases, pilots may not have been fully briefed. In other cases, procedures for entry into the adjoining air space were not implemented or observed.

Presidential visits did not hamper fire operations. However, the Presidential TFR (temporary flight restriction) was violated. When the President of the United States travels, a corresponding TFR moves with him as a security measure. This TFR restricts all aircraft from flying within a 30 mile radius of the President. As the President moves, so, too, does the TFR.

In anticipation of the Presidential visit, the airspace coordination group established procedures for suppression aircraft flying within the TFR in coordination with the Secret Service and the FAA. Incident aircraft were permitted to continue suppression operations within the TFR, provided they utilized a specially assigned transponder code and communicated their movements on a specially assigned frequency.

During the President's visit to the Cedar fire, multiple incident aircraft flew in violation of the TFR. Established TFR procedures, and the serious consequences of non-compliance, were not adequately communicated by key personnel at the Paradise and Cedar East and West Incidents. As a result, several aircraft entered the airspace and could not be identified by the FAA

personnel monitoring the TFR. This caused serious Presidential security concerns.

Airbase Security
Security at the Ramona Airbase Facility was not in compliance with current State or Federal standards**.** Security of aviation-related facilities and resources is of special concern in light of national security threats such as terrorism. Enhanced monitoring, access restrictions and other requirements are now in place at aviation facilities, as directed by the FAA and the Department of Homeland Security. Lack of adequate security at the Ramona airbase facility raised concerns about meeting new departmental aviation security policies. Egress and ingress to aircraft at the facility was not effectively monitored. Vandalism, theft, and unauthorized access to aircraft, airbase and runway areas were of significant concern. Although no security-related incidents were reported, new stringent security requirements must be met at all times.

Safety Recommendations

Training and Qualifications

- Develop and implement a wildland fire operations and safety training program for all agencies and departments that support fire incidents, such as SDSO, animal control, Red Cross, and CALTRANS. All emergency personnel should participate in regularly scheduled joint incident simulation exercises and drills. Disaster and evacuation planning, and accompanying simulations and interagency exercises, are needed at a variety of scales.

- Continue and expand training to target crew cohesion, situational awareness and risk assessment management for personnel who respond to wildland fire incidents.

- Develop a wildland fire-training program for all agencies/department that will be operating within or adjacent to the wildland fire incident. This program should provide initial and continuing training to those individuals responding to or in support of wildland fire incidents.

- Improve training and simulation exercises on wildland urban interface fire operations for local departments.

- Interagency training and simulation exercises like the North County, Camp Pendleton and the Highway 67 Corridor should continue on a regular basis. In some cases, interagency training/simulations would need to expand in scope and context.

- Agencies need to standardize qualification and certification requirements for aviation positions, at the state level.

Evacuations

- Personal protective equipment and other essential safety items should be furnished to and used by all emergency workers engaged in wildland fire activities.

- Develop a comprehensive plan for structure triage and protection standards to include identification protocols, such as flagging.

- Provide evacuation information in both English and Spanish.

Communications

- Explore options to utilize funding opportunities such as Rural Fire Assistance (RFA). Volunteer Fire Assistance (VFA) and FEMA Assistance to Firefighters grants to upgrade and standardize VHF radio systems for smaller local fire departments. Excess Federal and State VHF radios may be available to local fire and police departments.

- Rehabilitate and maintain the radio network on the Cleveland National Forest.

- Establish at least one cache in San Diego County for radios and related equipment.

- Continue to explore resolutions to excessive international non-fire radio frequency traffic.

- Develop a list of pre-tested extended attack FM frequencies for both air and ground operations that are clear from interference.

- Develop an aviation communications plan to address identified air-to-ground communications deficiencies.

Airspace Management

- Once virtual fences are established, boundaries must be carefully observed; procedures for entry must be thoroughly briefed to all pilots, and appropriately documented on form ICS 220.

- Establish standardized procedures for implementation of and compliance with Presidential TFR's. All aviation operations personnel must be adequately briefed. Air operations managers need to understand and appreciate the gravity of non-compliance and the serious consequences (including revocation of licenses) for pilots who are in non-compliance.

- Review conditions at the Ramona airbase facility to determine security deficiencies and needed improvements and fortifications.

V. Focused Areas of Review

> *"Wildland fires continue to take an intolerably heavy toll of life and property in California despite advances in technology and firefighting effectiveness. Much of the destruction by wildfire occurs within a few critical days each year when air temperature soars, relative humidity drops to near zero, and wind velocity increases to 50 miles per hour and more"* - Excerpt, "Recommendations To Solve California's Wildland Fire Problem", Task Force on California's Wildland Fire Problem, 1972.

The 2003 San Diego County Fire Review team was directed by the Regional Forester, Pacific Southwest Region, US Forest Service, Forest Supervisor, Cleveland National Forest, and the CDF San Diego Unit Chief to review a number of specific areas pertaining to the management of the Cedar, Paradise and Otay fires. The areas of assessment are:

- Wildland fire coordination policies and procedures such as the use of interagency aviation operations, qualifications, training, and certification procedures of the agencies involved
- Procedures, system and coordination with other organizations such as (but not limited to) South Zone Coordination Center, Riverside California, and the Southern California Multi-Agency Coordination Group
- Organizational management, leadership and the use of the Incident Management System model to address firefighter and public safety
- Pre-incident preparedness, including plans and agreements
- Environmental and social conditions which may have contributed to the severity and effects of the fires.
- Possible interagency strategies to reduce the probability and consequences of future catastrophic fires

The remaining sections of this report present findings and recommendations based on over 120 interviews with fire service personnel involved in the incidents, input from the stakeholder workshop held in November, 2003, and observations of wildland fire experts on the review team.

A. Wildland fire coordination policies and procedures such as the use of interagency aviation operations, qualifications, training, and certification procedures of the agencies involved

Summary

A large-scale, complex aviation operation was initiated for the Cedar, Paradise and Otay incidents. Aircraft resources were critical to suppression efforts.

No aviation-related accidents or injuries occurred. In considering the scope of the incidents, within the context of an extremely congested air space, sometimes hazardous weather conditions, poor visibility, and the dangers inherent in any aviation operation, aviation staff on the fires deserve recognition for their operational skills and attention to safety. A number of significant operational challenges were evident, however.

Inconsistent or outdated agency policies, lack of formal interagency agreements and training, and limited local, State and Federal coordination and planning are significant issues that should be addressed. Communications and coordination difficulties compromised safety to a degree.

Findings

Aviation Cutoff and Shutdown Policy

Aviation policies are inconsistent across agencies. Existing policies relating to aircraft “cutoff” and “shutdown” times between State, Federal, and local agencies are not consistent. State and Federal policies are each applied to different categories of aircraft. Local governments implement their own separate policy in regards to authorized hours of aircraft use. These inconsistencies may cause problems in interpretation in an interagency incident management setting. The distinction between “cutoff” and “shutdown” has been identified as an issue in need of clarification.

California State policy cutoff (in the context of an initial aircraft dispatch, with no air attack or helicopter coordinator already on scene) States that aircraft (planes or helicopters) may not be dispatched so as to arrive at an incident no later than 30 minutes before sunset. Cutoff is determined by referencing a standard table that provides these times according to the week within the year and the corresponding calculated time of official sunset.

Federal cutoff policy is consistent with State policy, except that it references only air tankers, and does not specifically address helicopter use. Air tanker dispatching procedures on the initial attack of the Cedar fire complied with current policy prohibiting dispatch after cutoff’.” Air tanker cutoff, as articulated in Federal policy, relates to restrictions on the dispatching of air tankers in low ambient light conditions. Specifically, air tankers cannot be dispatched to arrive

at an incident earlier than 30 minutes after official sunrise, nor later than 30 minutes before official sunset, unless approved aerial supervision is on scene.

"Shutdown" is when all low-level aviation and single engine aircraft operations are shut down for the night. This is normally 30 minutes after sunset. Federal policy does not permit nighttime aviation fire suppression operations, nor does the State.

The Cedar fire was reported at 5:37 pm on October 25th. This was 3 minutes after aircraft cutoff. Accordingly, no aircraft resources were dispatched to the Cedar fire at that time, but instead were ordered for immediate use the following morning. San Diego County Sheriff's office contacted Monte Vista ECC and offered the use of their helicopter for use for the incident, but the offer was declined due to interpretation of the "cutoff" policy.

County and City jurisdictions resources with fire suppression aviation resources sometimes implement other policies that permit nighttime aviation operations. These policies are not addressed in Federal or State mobilization guides. Because no agreements or standard operations are in place for the use of local aircraft on interagency incidents in San Diego County, policies for the use of these resources, including the hours of permitted operation, are not widely understood.

"No Divert" Policy

Implementation of the "No Divert" policy caused difficulties with aircraft use. State policy allows for an IC to request a "No Divert" on a specified number of aircraft if he or she "recognizes critical problems, such as safety of personnel, structures, or high values at risk, and has an urgent need for continued air support…" At that time, the specified aircraft will not be reassigned until the IC chooses to release them. The "No Divert" policy, as written, does not make a distinction between airborne aircraft or those resources held on the ground.

Aircraft under a "No Divert" were held on the ground for use in structure protection needs anticipated on another fire in the region. However, weather and visibility conditions prohibited safe operation on that fire, so aircraft sat idle on the ground. Other incidents with high need for aerial support, including the Cedar, Paradise and Otay fires had conditions conducive to aircraft use, but since the aircraft were on "No Divert" status, there was a delay in reassignment.

Use of Military Aviation Assets

Military resources are stationed nearby, and their use was advocated early on in the incidents. The US military has various aviation and other resources that are suitable for fire suppression operations. In San Diego County, Camp Pendleton maintains CH-46 helicopters with buckets, Miramar Marine Corps Air Station has CH-53 helicopters with buckets, and North Island Naval station has H-3 helicopters.

These heavy-lift helicopters work well for water-drop operations, but there are several constraints on their participation in wildland fire suppression operations. The Economy Act of 1932 limits the utilization of military assets prior to the complete use of all available civilian resources. Military aircraft utilize different communications that sometimes are not compatible with Federal, State and local fire agency communications systems.

Military pilots do not routinely receive specialized wildland fire suppression training that wildland fire aviators receive. This training includes wildfire suppression safety, strategy and tactics, and ground and airspace operations. However, military pilots usually receive some military training in the use of aerial buckets.

Additionally, in the case of Miramar specifically, personnel turnover due to deployments and transfers are somewhat prohibitive to the establishment of dedicated personnel trained specifically for wildland operations. These factors restrict immediate deployment of military assets to assist in wildland fire suppression activities.

There was considerable pressure and interest from elected officials and members of the public regarding use of military aviation assets from local bases. Military and USFS officials in Washington eventually authorized the use of military aircraft. At that time, mandatory training of pilots and crews was initiated.

Miramar aircraft were used on the Paradise fire late in the incident. After a two-day abbreviated tactical and safety training provided by fire agencies, they made 53 bucket drops on the fire. A dedicated helicopter coordinator was assigned to supervise the activities of the military helicopters

Helicopter pilots from North Island Naval station received abbreviated training from San Diego City and were available within San Diego City's jurisdiction, provided no interagency aircraft came into the city's airspace. However, these military aircraft did not engage in any suppression activities.

CH-53 flight crews advised the helicopter coordinator assigned to them was extremely helpful. However, military pilots are highly skilled in general aviation operations, and they expressed the training was too remedial with respect to pilot and general aircraft operations. They requested more specificity with regard to tactics, techniques and airspace coordination for future training.

The communications packages in the CH-53 and the H-3's military helicopters were compatible with wildland agencies communications systems.

Sharing of Aviation Resources Among Incidents
Coordination between air attack and lead plane was positive and effective to coordinate the sharing of aviation resources between the Cedar fire and the Paradise fire.

Recommendations

- Develop a consistent, easily understood aviation resource use policy for State and Federal agencies to address all categories of aircraft use under low-light ambient conditions.

- The current "no divert" policy, and guidelines for implementation need to be assessed. Any revisions would ideally make appropriate distinctions between airborne, actively working resources and those held on the ground, and provide guidance for multiple-incident scenarios.

- If the County chooses to pursue the option of using military resources, necessary pre-season preparations include:

    - Agreements
    - Training, including comprehensive classroom and field training. Existing California National Guard military helicopter training program is one suggested template.
    - Communications retrofit / augmentation, as indicated, for military aircraft

- Examine ways to improve operations and organization at shared helibases, specific to pilot briefings and preparation of daily assignments.

B. Procedures, system and coordination with other organizations such as (but not limited to) South Zone Coordination Center, Riverside California, and the Southern California Multi-Agency Coordination Group

Summary
There are 62 fire departments in San Diego County, but there is no countywide fire department. Twenty-seven percent of these departments are volunteer organizations. Overwhelmingly, local, State and Federal personnel stated that interagency relationships are congenial, positive and cohesive. However, these relationships are not always formalized with structured agreements. Inconsistent participation in interagency pre-season meetings, and inconsistency in the implementation of established policy and procedures hamper overall interagency coordination and effectiveness.

Management of these fires depended on the coordination between a number of entities. The Monte Vista Interagency ECC functioned well as a unified ordering point and expanded dispatch. The County EOC is formed only intermittently in times of emergencies and so its role was not clearly understood, by the wildland fire agencies. The Office of Emergency Services coordinates the Statewide mutual aid system for the office of the Governor and was invaluable in the procurement of resources from across the state. However, daily briefings with the OES Fire and Rescue Coordinator and local fire departments did not take place. Local departments did not have all the intelligence information needed about the incident status, available resources, or progress made towards its control

During initial and extended attack, resource ordering systems were overwhelmed. Resource ordering was cumbersome and sometimes delayed due to operational problems within and between MIRPS and ROSS.

Findings

Interagency Coordination in San Diego County
Interagency Relationships
Pre-fire interagency relationships were good across the County, but not always formalized with agreements.

Preseason Meetings and Exercises
Interagency pre-season meetings take place, but not always on a consistent basis, and are not attended by all cooperators. Preseason operations meetings have been effective locally and are a valuable forum for proactive discussion and planning prior to the season's start. They have been well-received on a local basis, with the Forest Service, CDF and some local government in attendance, but not all agencies have been represented or invited to attend meetings, and they are not consistently scheduled. The Forest Service and the CDF Unit Chief met this year for their annual operations meeting, but this coordination has not been consistent in the past. Meetings between the FS/CDF at the Division / Battalion chief level have been occurring on a regular basis.

Dispatch Procedures
The Monte Vista ECC functioned well as a unified ordering point and expanded dispatch. CDF, USFS and the OES Fire and Rescue Operational Area are located at this center. Orders for Forest Service or California Department of Forestry were made through the center and local government resources were ordered through the OES Operational area.

The "closest resource" dispatch protocol is not consistently applied in San Diego County by the Monte Vista ECC with all four zone dispatch centers that dispatch local government resources. The "closest resource" protocol directs that regardless of agency jurisdiction for an incident, the appropriate resource closest to the fire is dispatched to respond for initial attack.

Failure to implement the closest resource concept is particularly evident as it relates to the tribal fire department, paid on-call local firefighters, and volunteer departments. One primary reason is that the availability of these resources is inconsistent, and initiating their response to an incident is sometimes protracted with delays on page responses, etc. In cases where immediate incident response is critical, dispatchers will utilize resources that, although they are not truly the "closest resource", are readily available to respond to a call.

Some agencies held on to resources operating within their own jurisdictions and continued to use them outside normal incident management control. This action limited the Incident Management Teams' ability to manage the overall incident and provide support, briefings and direction.

There continues to be reluctance to order/assemble/receive operational resources in "task force" configuration. A "strike team" is an established number of resources of the same type – crews, engines, or dozers - with common communications and a leader. A "task force" is a set of mixed resources in any configuration, such as a crew, a dozer, and an engine, assembled for a specific purpose, with common communications and a leader. County agencies are not accustomed to using resources configured as a "task force."

Drawdown Levels
All San Diego unit CDF engines were in San Diego County when the Cedar and Paradise Fires started. Engine resource levels for the US Forest did not go below drawdown prior to the start of the Cedar Fire.

Briefings
Daily briefings with the OES Coordinator and local fire departments did not take place. Local departments did not have all the intelligence information needed about the incident status, available resources, or progress made towards its control. The Office of Emergency Services coordinates the Statewide mutual aid system for the office of the Governor. The role of the OES Fire and Rescue Coordinator, who is elected by County fire chiefs, is significant in that it provides and important communications link to local fire departments.

County Emergency Operations Center
The County EOC (Emergency Operations Center) is established as a temporary operating facility in times of major disaster. It is a tremendous resource that was not fully utilized during these fires. It is organized, staffed and maintained by interagency personnel to coordinate strategic management decisions for the overall incident at the County level. Intelligence gathering and dissemination is a primary function of the County EOC. The County EOC coordinates with jurisdictions within the County to provide logistic support as requests come in.

The County EOC did not initiate sufficient intelligence gathering actions. They did not have all the information needed for proactive or anticipatory logistical support.

The role of the County EOC was not clearly understood, especially by the wildland fire agencies. During this series of fires, most fire departments were not represented at the EOC, with the exception of CDF, which had a representative present for a few days. One difficulty with the County EOC concept is that this unit is formed only intermittently in times of emergencies. Roles, responsibilities, and overall functioning may not be well understood or routinely practiced. Recent Countywide drills had been useful in familiarizing staff with EOC functioning, however.

Interagency Coordination between San Diego County and South Zone Coordination Center and the Southern California MACS
The fires in San Diego County started late in the Southern California 2003 fire siege and the timing influenced incident management team response, mutual aid responses and the availability of local personnel.

Mutual Aid
Firefighting resources from outside jurisdictions began to arrive in San Diego County on October 26 at 0004 hours. By 0410, OES had supplied 12 strike teams of engines from outside San Diego County. OES also requested 100 engines from Arizona and Nevada for use in San Diego County.

The San Diego County area is sometimes referred to as the California “Cul-de-sac.” Resources are often staged first for incidents in and around the Los Angeles Basin, because Santa Ana wind events usually start in the Santa Clarita and Cajon Pass areas, and then move south. Resources can be (and often are) depleted by the time San Diego County requests them. There was a concern that adequate resources would not be moved up to support the County in a timely manner.

Resource Ordering Systems
During initial and extended attack, resource ordering systems were quickly overwhelmed, and in many cases resources were obtained by bypassing dispatch, and in some cases, contacting needed resources directly. This worked effectively when resources were urgently needed. However, tracking, coordination and control of resources was impacted on the overall incident. Payment, reimbursement, and other issues were further complicated.

Some agencies expressed that resource ordering was cumbersome and sometimes delayed due to operational problems within and between MIRPS and ROSS. The Multi-agency Incident Resource Processing System (MIRPS) is automated resource ordering software designed through collaboration between CDF and Region 5 of USFS.

MIRPS is used throughout the CDF command & control infrastructure and USFS Dispatch Systems in California. MIRPS provides for notifications, resource status displays, resource ordering, and database reporting.

ROSS was established in 1997 and automates resource ordering, status tracking, reporting, and notification processes on a nationwide basis in near real-time. The development of ROSS is ongoing with some enhancements yet to be incorporated.

The National Interagency Coordination Center (NICC) and all of the Geographic Area Coordination Center (GACCs) began use of ROSS in spring of 2003. California GACCs utilized ROSS to interface with NICC for out-of-state resources, but maintained MIRPS as the official system for use in California. As a result, it was necessary for personnel at the GACC to manually transfer information between MIRPS and ROSS. Eventually, ROSS and MIRPS will be integrated to function seamlessly. During the 2003 fire season, however, the systems were not fully integrated.

These separate ordering systems caused delays as systems became overloaded. Procuring goods and services for essential support, such as food, sanitation facilities, and water, became difficult.

Area Coordination
The USFS and CDF established a 5-person Area Coordination Team to assist the County with resource coordination, effective the evening of October 29th. This team also participated in twice-daily MAC calls held by the OCC in Riverside.

Recommendations

- The Operational Area Fire and Rescue Group Coordinator should provide a daily resource availability status summary to all four zone dispatch centers.

- All involved agencies should provide a standing representative to the County EOC during major wildland fires that affect multiple jurisdictions.

- Continue early pre-staging of resources during periods of high fire danger.

- Streamline procedures for use of local contracts to procure resources such as sanitation facilities, caterers, water tenders, and other essential services that are readily available. Develop local incident support capabilities.

- Create a local MACS Coordination Group for the greater San Diego County area, established by the OES Fire and Rescue Coordinator. The MAC group would represent all departments and agencies with fires burning within their jurisdictions. Operational plans would establish triggers for activation of the MAC based on fire activity and current resource drawdown levels.

C. Organizational management, leadership and the use of the Incident Management System model to address firefighter and public safety

Summary

Some agencies get more practice than others in the application of the Incident Command System during large scale, multi-jurisdictional incidents. Large wildland fire agencies that routinely respond to large interagency incidents on a regular basis are well-versed on the workings of ICS. Smaller or more localized fire agencies use ICS for smaller-scale incidents, so they are less accustomed to its use on a large scale and over extended periods. Law enforcement and support agencies were also less familiar with the functioning of ICS.

Wildland firefighting responsibility is apportioned through a Statewide agreement into Federal, State, and local areas of responsibility. In cases where lands are intermingled, these lands are divided into practical Direct Protection Areas. These areas are delineated by boundaries regardless of statutory responsibility, and this protection is assumed by either the Federal or the State firefighting agencies. As fires moved through different responsibility areas, command structures were fragmented. As with other areas of review, communications difficulties diluted the effectiveness of the command structure.

Findings

ICS Implementation

Poor communications and a lack of leadership hindered full ICS implementation. There was no incident wide command structure in place until 0700 on August 27th, when CDF Incident Management Team #5 assumed command of the incident. During the initial phase, when the command structure was fractured, functional groups in localized areas functioned independently, conducting operations as prioritized locally. ICS, albeit on a smaller scale, was well implemented.

Some personnel (including law enforcement and support personnel) did not fully understand the functioning of unified command and corresponding roles within the ICS organization. There are some differences in the way that law enforcement interprets and implements ICS, and differences in system terminology caused some misunderstandings at the field level.

"Zoning"

Zoning the Cedar fire resulted in roles and responsibilities that were unfamiliar to personnel on the incident. Zoning fires is a practice that is sometimes used by Federal agencies, but CDF is not universally comfortable with this strategy and it is not a recognized ICS practice. Creating zones within the Cedar Fire exacerbated communications difficulties, since a fire that was once managed as one unit was now being managed as two discrete units, with distinct boundaries,

communications frequencies, and command structures. Zoning addresses difficult span of control issues, theoretically making the fire more manageable as two separate and smaller units, but it also effects a rapid organizational change.

Air Operations
Verbal communications among the three Air Operations Branch Directors (Paradise, Cedar east and west) were not fully effective, and critical information was not shared in a timely manner. In this increasingly complex fire suppression aviation operation, personnel task assignments, geographic locations, and chain of command changed rapidly. The means to effectively communicate these changes, using a communications system that was already strained and in some degree of disarray, was further compromised.

The Cedar west fire shared a helibase with the Paradise incident. The Paradise fire helicopter operations were co-located with Cedar west because this incident was not utilizing a large number of aviation assets and suitable base locations were at a premium. This arrangement also seemed logical since the Paradise fire was intermittently borrowing helicopters from the Cedar west fire.

Co-locating helibases offers certain logistical advantages when large incidents occur in close proximity, but this strategy posed problems with regards to pilot briefings and important communications. Briefings for both incidents were held jointly. Pilots received both sets of daily briefing documents simultaneously. Assignments were not always made immediately. Sometimes pilots were assigned to the Paradise fire, sometimes to Cedar west. Because both fires were large and complex, assimilating all tactical and safety information, making needed adjustments on communications equipment, and ensuring critical information and details were incorporated into operations was difficult and gave rise to several communications problems.

Recommendations

- San Diego County agencies and departments should operate under the FIRESCOPE Incident Command System as the single incident management system. Specific needs and concerns of agencies and departments would be addressed through regular coordination and operations meetings.

- In preseason meetings, formalize the use of multiple ICS Branches (using local jurisdictional agency as the Branch Director) when developing the incident organization for rapidly spreading wildland fires through multi-jurisdictional environments. Use pre-determined agency/department contacts under unified command. All agencies and departments should participate.

- When possible, co-locate the Incident Command Post and base camps established for law enforcement coordination. Catalog their locations.

- Local, State, Tribal and Federal agencies along with cooperators, should meet minimum CICCS (California Incident Command Certifications System) standards for wildland fire operations. Appropriate training for local government resources through CIICS should include S290, Intermediate Fire Behavior and S205, Fire in the Interface.

- Training is needed for all participating emergency management agencies on ICS qualifications and certifications.

- Develop written clarification of aviation roles, responsibilities and procedures when incidents are divided into zones

- Take advantage of all agencies' capabilities and implement the ICS organization (at the Command and General Staff) during either complex or rapidly expanding incidents as staffing qualifications and skills allow.

D. Pre-incident preparedness, including plans and agreements.

Summary
Preparation for large-scale civil disasters of any kind requires a high degree of interagency planning and coordination. Administrative and operational agreements, policies and procedures must be established and understood by all cooperators. Roles and responsibilities require definition and concurrence. This effort requires dedicated time for interagency meetings, training and briefings. Effective pre-incident planning requires an equitable and consistent level of commitment and participation on the part of all cooperators. Many jurisdictions and organizations play roles in emergency response operations in San Diego County. Cohesive, well-organized multi-agency pre-incident planning and coordination is critical to the success of future emergency response efforts.

Several Statewide interagency agreements are in place relating to wildland fire emergency response. Three of these agreements were of particular significance during the Cedar and Paradise fires. The Cooperative Fire Protection agreement and the California Fire Assistance Agreement, and the Master Mutual Aid Agreement are of particular significance as the primary statewide agreements that govern interagency wildland fire operations.

At the local level, the Mutual Aid Agreement for San Diego County is current and is signed by all fire departments. This agreement provides for mutual aid within the County at no cost. The local operating plan, which implements the Cooperative Fire Protection Agreement was not updated and signed this year, but is understood by the affected agencies.

Findings

Aviation Hazard Maps

Aviation hazard maps were not readily available for the incidents**.** These maps aid pilots to identify hazards in a given area, particularly those for low-flying aircraft, such as power lines, towers, etc.

Agreements and Procedures

There are no current mutual aid agreements, standard operating procedures, or well-understood, consistently applied guidelines for use of local government aviation resources on interagency incidents. The San Diego City fire department leases a helicopter for search and rescue and fire-related missions. Under current internal operating guidelines, the helicopter is released each night and re-ordered for the following operational period. Additionally, it can be re-directed from a mission, as needed, for County–wide search and rescue. These and other operational guidelines are not fully understood by cooperators and dispatch centers and may have led to underutilization of this resource.

San Diego County Sheriff's Department (SDSO) has six helicopters that are primarily used for law enforcement and search and rescue. They are intermittently also used for fire suppression. Not all of the pilots are certified fro fire missions. This resource may also be underutilized since there are no standing agreements for dispatching or use, and SDSO operational procedures are not fully understood by cooperators or local dispatch centers.

Reservation communities and adjacent fire departments are uncertain about the jurisdictional authority for evacuation nor do they have knowledge of any existing emergency response plans for those areas.

Planning

San Diego County has a comprehensive disaster plan, but lacks a coordinated, detailed evacuation plan. There is no coordinated emergency resource mobilization plan.

County Agencies have emergency operations plans that are not readily referenced, not sufficient in detail, nor widely reviewed or understood by personnel or citizens. These manuals are not convenient for use in field emergency situations. Information is not updated and does not contain sufficient detail for coordinated field operations.

Intelligence and Information Sharing

Emergency dispatch centers (managed by the State and Federal wildland fire agencies, local governments, and the San Diego County Emergency Operations Center) did not effectively share information and intelligence. Such intelligence includes accurate and timely information about fire movement, suppression and/or evacuation operations underway, resource status and location, and other categories of information pertinent to fire suppression and/or rescue operations.

Some excellent maps were developed by the County EOC, but these were not effectively utilized by the incidents.

Recommendations

- Current aviation hazard maps need to be jointly developed for San Diego County and be readily available. Multiple copies should be on hand.

- Develop cooperative agreements between wildland agencies and San Diego City and SDSO. Take steps to ensure respective operational guidelines are understood to facilitate full use of the resources when they are available.

- Ensure Tribal residents and adjoining fire departments assign responsibilities and pre-plan procedures for evacuation.

- Review and update the local operating plan. Assess the need for additional cooperative agreements to formalize local response to incidents.

- Develop a greater San Diego County area communication plan for emergency response that is consistent with the California Fire Assistance Agreement. Incorporate radio communications guidelines in the FIRESCOPE ICS-420-1 Field Operations Guide.

- Wildland fire agencies should work with the San Diego County Emergency Operations Center to development of a plan for timely distribution of intelligence information.

- Establish coordinated Countywide mobilization plans for emergency incident management and response. Plans should encompass all risk management and represent the needs of all agencies and departments.

- Expand the coordinated countywide evacuation plan to be administered by the Sheriff during emergency and disaster operations that includes all agencies/departments that engage in related direct incident response or secondary support activities. This plan should be specific and detailed, well organized, readily available and easily referenced to provide adequate direction to both staff and field personnel. Pre-incident review of and familiarity with evacuation plans should be encouraged. The evacuation plan ideally would be part of the comprehensive County disaster response plan. Elements of this plan could include:
    - All-Risk (Training for different kinds of disasters)
    - Communication
    - Early Alert Systems
    - Evacuation and Rescue
    - FIRESCOPE ICS
    - GIS/Mapping Products

- Joint Public Information
- Mobilization Guide
- Training
- Wildland Fire Response

E. Environmental, biological and social conditions which may have contributed to the severity and effects of the fires, as well as those which may have prevented / mitigated fire's effects.

> *"Adding to the complexity of the wildland fire problem are the many subdivisions, individual homes, and recreational developments located in the hills and mountains. People build homes there because it is more attractive than living in large urban areas. Unfortunately, despite recent efforts by State and local governments to impose fire safety regulations on such home sites, wildland residents rarely prepare for the inferno that can sweep through volatile brush and timber and destroy their homes in minutes"- **Excerpt, "Recommendations To Solve California's Wildland Fire Problem", Task Force on California's Wildland Fire Problem, 1972.***

Summary

The overall environmental and biological factors that contributed to the 2003 San Diego County fires are easily identified: long-term drought, dry, extremely windy conditions and the accumulation of dense, drought and insect-killed fuels in open spaces and undeveloped areas adjacent to urban development.

Discussion and analysis of wildland-urban interface fire events must include investigation of social factors that influenced the final outcomes of the incidents. It is critical to assess the level to which the community and government recognized, acknowledged, and prepared for the event of wildfire. This includes consideration of urban development patterns, construction types, and level of awareness and preparation on the part of residents and local, Federal and State governments. In some areas, lack of appropriate planning and preparation contributed to poor outcomes. In other cases, social factors played a key role in limiting fire-related damage and saving lives.

Social conditions contributing to the fire's effects are not as easily summarized. Residential developments in San Diego's wildland-urban areas are generally rather high in density. Newer developments reflect contemporary building codes, and are constructed with less flammable materials such as tile roofs and fire resistant sidings. Older developments and homes in rural areas were built in accordance with older, less stringent codes, and are not generally as resistant to fire, although some homes have been retrofitted with fire-resistant materials.

There is a comprehensive awareness of the threat (and historic regular occurrence) of wildfires on the part of residents and local officials. However, fire-related considerations have not been well integrated into community planning,

general government and public preparedness, and the behaviors and lifestyles of residents.

Findings

Land Use and Development

Within San Diego County, there has been significant structural development in the past 20 years without an appropriate level of emphasis on wildland fire protection planning. This trend is similar in many other communities in the western United States, where urban areas are increasingly spreading outward to border, or expand into, wildland areas. Appendix B includes a comparison of the number of houses within the Laguna Fire imprint in 1970 and the current amount of development. This analysis is based on data provided by the County of San Diego. According to county records there was an increase of over 9217 residences within this perimeter, a fivefold increase in a 34 year period.

With regard to the planning and development of communities, general areas of concern include inappropriate construction materials, such as shake roofs and wood sidings; developments situated within topography that increases vulnerability to fire, decreases their defensibility, and makes evacuations difficult; insufficient egress and ingress for neighborhoods and communities in proportion to population density; lack of greenbelts or vegetation clearances; and the use of landscaping plants that are not suitable in a fire-prone environment, such as eucalyptus trees. An analysis of both the influence these factors is also included in Appendix B.

Flammable Landscaping

Eucalyptus trees contributed to fire spread. It is well documented that eucalyptus does contribute to long-range spotting in large fires. The composition and shape of eucalyptus leaves make them float aloft readily within a fire's convection column. They are caught by winds and flutter to the ground, while still smoldering, to cause spot fires. The shaggy, hanging bark shards on eucalyptus trees and excessive ground litter generated by this species also adds to fire spread. It was observed during the Cedar incident that where debris had been removed under younger stands of eucalyptus, fire did not move into the tree crowns.

It is difficult to eradicate eucalyptus trees once they have become established. Damaged or burned trees will re-sprout vigorously from the base of the trunk. After a widespread cold snap in the San Francisco Bay Area in the 1970's, thousands of frost-killed eucalyptus trees were cut down on the University of California, Berkeley campus. Because residual stumps were not treated with herbicides, most of these trees re-sprouted and have grown back to their former size.

Open Space Management

There are extensive undeveloped open space areas throughout San Diego County. These areas include Federal, State and private lands, as well as those

managed by the County. Because these areas are important plant and animal habitats, they are conserved in accordance with Federal, State and local laws. In addition, preserving these lands helps to protect cultural resources. There are over 10,000 recorded archaeological sites in San Diego County, more than any other County in California.

Open spaces and preserves also provide recreational opportunities and are visually pleasing to many in the community. However, these open space areas provided a significant source of fuel for the 2003 fires. Because these corridor areas often cut through or closely border urban developments, they carried fire into neighborhoods. There is a strong correlation between structures lost in relation to distance to open space. This analysis is contained in Appendix B. Vegetation management in these areas is critical.

Environmental Policy
When implementing certain actions that can affect the environment, State and Federal governments must comply with a number of regulations, including various environmental laws and their specified administrative procedures. This includes the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). These laws require varying degrees of project analysis and opportunities for public participation. These laws provide an important element of oversight to government activities, and provide for set procedures and timelines for analysis documentation, public comment, and appeals.

Depending on the type and location of the project, fuels management work is subject to the requirements of these laws. Environmental compliance laws are somewhat complex and sometimes delay the planning and implementation of hazardous fuels treatment projects within the County. Prescribed mitigation requirements, such as steps necessary to protect species or limit emissions into the air, sometimes limit the scope and effectiveness of prescribed fire and other fuels treatments.

Closure Policy
Closures of Southern California National Forests, Public Lands, and State and local parks and other recreation areas during extreme fire danger are one way to help prevent ignitions and protect the public. Closure guidelines among and between agencies are inconsistent and often plans and their protocols are difficult to understand or easily implement.

Forest closure and use restriction protocols have been established for the Cleveland National Forest. Closure implementation guidelines are based on two criteria: the burning index (BI) and live fuel moisture levels. Guidelines for BI and fuel moisture thresholds differ by fire management analysis zone (FMAZ). FMAZ's are administrative areas delineated within the Forest and are used for

fire management and planning purposes. The plan guidelines allow for closure of discrete FMAZ's, or for a full Forest-wide closure.

The closure plan also States the Forest Supervisor may exercise the discretion to declare a closure if Red Flag wind warnings are in effect (25 mph+ winds) and large, multiple fires off-Forest had depleted fire suppression forces substantially. Hunting, as a specific activity, is regulated exclusively by California Department of Fish and Game (CDF&G). The US Forest Service can and has closed the Forest to all users under the Fire Restriction and Closure Plan guidelines, but the agency does not have the authority to close the Forest only to hunters.

On occasion, during periods of extreme fire danger, public access to National Forests may be prohibited or restricted temporarily to prevent human-caused fires and to protect visitors. Generally, on most Federally-managed Forests, parks, and public lands, closure is implemented as a last-resort measure, and the CNF's Emergency Closure Plan reflects this overall philosophy. It states "…closures will be implemented as a last resort when there is no other option available to protect Forest resources and provide for public safety."

Recommendations

"The only alternative to planned and managed vegetation patterns in Southern California appears to be the acceptance of great economic damage, threat to human life, and the unpleasant aesthetic and environmental effects of unmanageable wildfire"- Excerpt. Can Southern California Wildland Conflagrations Be Stopped? USDA Forest Service General Technical Report PSW-7. 1974

- Adopt the vegetation management and the codes and ordinances recommendations from *Mitigation Strategies for Reducing Wildand Fire Risks,* a report presented to the San Diego County Board of Supervisors on August 13, 2003.

- Study the possible correlations between introduced plant species and wildland fire, including studies to determine the extent to which eucalyptus may contribute to fire propagation, spread, and structure loss. Develop vegetation layers for GIS analysis, including locations of eucalyptus trees, to further research in this area.

- Local scientists and researchers, land managers and fire management experts should explore methods to manage open space corridors and preserve areas adjacent to developments. The group would research optimal methods to manage vegetation while preserving view sheds, and sensitive species, habitats, and other resources set aside for conservation.

- Comprehensive fire and fuels planning must be integrated into preserve system management. Such plans should adequately consider periodic drought conditions and accompanying extensive mortality of native vegetation. Also, they would incorporate considerations for the dynamics of vegetation communities on the landscape-scale, including creation and maintenance of appropriate age classes and edges; and appropriate management of Forested areas. Additionally, vegetation management strategies must be formulated that prevent or minimize the proliferation and spread of non-native annual grasses, which can pose an even greater fire hazard than native vegetation.

- A broad suite of fuels management options should be assessed, including mechanical treatments, grazing, and prescribed fire treatments. The County Parks Department and the Department of Planning are currently drafting management plans for the Barnett Ranch and San Vincente preserve areas that include fire management as a central topic.

- Large-scale, cross jurisdictional fuels management is needed as part of a County-wide fuels management plan. Building and weed/brush abatement codes need to be standardized and uniformly enforced. Unmanaged open space areas need assessment and appropriate treatment.

- Develop consistent fire-hazard closure guidelines for Federal, State, and local open space areas and parks within the region. Make closure plans simple and straightforward, with guidelines that are based on easily measured thresholds. Accommodate a wide degree of managerial discretion in closure orders.

F. Possible interagency strategies to reduce the probability and consequences of future catastrophic fires

Summary

A number of interagency efforts are required to reduce the probability and effects of future large fires in San Diego County, and have been previously discussed throughout this report. These efforts require consistent communication, coordination and collaboration. Throughout interviews and research, the Review Team found that officials from all agencies characterize interagency relationships in San Diego County as cordial and productive. These positive relationships provide a solid foundation for the establishment of structured, cohesive interagency readiness and prevention efforts, including regular training, planning and coordination.

Interagency efforts must also focus on public information, perceptions, and education. Residents of the wildland-urban interface must be informed, involved, and proactive in the effort to prevent fires and to lessen their impacts when they do occur. The media is a primary source of information for most residents.

Interagency partnerships in the establishment of productive relationships and efficient systems of information transfer to local media outlets are essential.

Agencies must work together to continue to build on strong relationships with the communities they serve. This requires efforts to initiate regular, timely communications with the public. Existing positive relationships with the public serve as a strong foundation for joint efforts to find and implement strategies for wildfire readiness and prevention. Community-based efforts underway, including activities of FireSafe Councils, indicate the public's increasing understanding of the wildfire threat and their willingness to take proactive measures to protect their families, neighbors and homes. These community-based activities must be encouraged and supported.

Findings

Interagency Strategies

San Diego County lacks a Local Type II Team that can be assembled on short notice. Type II teams have been assembled in the past, but proved difficult to fully staff with qualified personnel, so teams were re-configured with A, B and C designators and are teams for the Cleveland, San Bernardino and Angeles National Forests. The ABC Teams are on rotation and can (and often are) dispatched to assignments to the Los Angeles or San Bernardino areas. Additionally, they are not as readily mobilized as compared to an established, local type II team.

Media

Local media, such as newspapers, TV and radio stations, are extremely important links to the community during large-scale disasters such as the Cedar and Paradise fires. Media coverage was extensive, particularly in local newspapers.

Many media reports were very positive, and information proved very useful to the community; others were very critical, and not based on accurate facts. In interviews with personnel on the fire, the review team found that inaccurate media reports hit especially hard and caused frustration. Inaccurate reports about firefighter fatalities were especially stressful for firefighters and damaging to morale.

Difficulty with communications and information within the fire command, staff, and dispatch and field operations structure has been highlighted. The media also had difficulty the obtaining accurate, timely information. A lack of consistent, coordinated and unified media relations hampered the flow of accurate, consistent, timely, and complete information to the media, and ultimately to the public. There was no unified response to, or coordination with media outlets.

Negative and inaccurate reporting indicates media representatives would benefit from appropriate training and education on fire operations.

Public Perceptions
In interviews with members of the public, the Review Team found that citizens directly impacted by the fire are skeptical about the fire departments' accounts of events during the fires relative to initial and extended attack suppression and rescue operations. They expressed that a lack of understanding behind the rationale for tactical decisions or the placement and deployment of resources. They posed many questions and raised concerns on a number of fronts relative to certain aspects of fire suppression operations. Some residents expressed that local fire departments did not convey realistic assessments about the survivability of their homes. They in turn perceived there homes were safer from fire than was actually the case.

The public's assistance to firefighters, such as providing meals and drinks, general cooperation, and other support, was significant.

Public Education
The Greater San Diego Fire Safe Council has great interest in participation in public education efforts, a larger number of public education officers and the development and funding of public service announcements.

The public does not fully understand which agency has the authority and responsibility for evacuation orders and operations. There is misunderstanding regarding "voluntary" evacuations versus those deemed "mandatory." Fire agencies were unsure of their authority, if any to implement "mandatory" evacuations.

Some homeowners chose to "shelter in place" – remaining at their residence to defend it and their belongings from fire. Many did not appear to have pre-planned defense actions, plans for contingency, or appropriate personal protective equipment. Their homes often did not have pre-existing defensible space and other fire-preventative features as promoted by FireSafe or FireWise.

Recommendations

Interagency Strategies

- Conduct multi-agency, County-wide disaster drills annually. Encourage wide participation from fire and law enforcement agencies, as well as agencies such as CALTRANS, animal control, Red Cross, and other support functions.

- Examine different methods for wide-scale community notifications systems, such as reverse 911.

- Continue local interagency meetings at the ECC, Engine Company, Battalion, Division and Command and Executive levels.

- Develop a local interagency Type 2 Incident Management Team (in short team configuration) for the greater San Diego County area for rapid response.

- Develop a comprehensive GIS- based Countywide mapping system available for all agencies and departments during emergency and disaster response and planning. Products would include large strategic planning capabilities and tactical maps.

- Establish a Countywide task force to evaluate San Diego County radio communications issues.

Media

- Coordinated pre-season informational seminars for the media could provide information on safety, operations, and contacts for media inquiries. Abbreviated seminars have been conducted annually in the past, but attendance by local press has been inconsistent.

- Establish a Joint Information Center for all incident management agencies in San Diego County, such as the system implemented by the San Bernardino Mountain Area Safety Task Force. Develop a media communications Operating Plan to serve all the stakeholders during emergency response activities.

- Review and develop opportunities to enhance intelligence-gathering capabilities, including new technologies that reduce exposure to risk, such as remote cameras, satellite information, enhanced aviation-based remote sensing, etc .

Public Perceptions

- Local fire service personnel should engage in post-fire outreach to the community to discuss the incident and answer to the public's questions and concerns.

- Fire departments should provide realistic assessments about home and community survivability and should continue to assist homeowners in finding and implementing strategies to make them more defendable.

Public Education

- Adopt the public education recommendations from *Mitigation Strategies For Reducing Wildland Fire Risks,* presented to the San Diego County Board of Supervisors, on August 13, 2003.

- Educate the public and media about opportunities for, and constraints on, using military resources in wildland fire operations.

- Continue efforts to educate the public about the need for defensible space around homes, and the flammability of local and exotic vegetation planted in open space and yards. Actively include public education resources such as the FireSafe councils in these efforts.

- Continue to seek ways to support the efforts of the Greater San Diego Fire Safe Councils, and their efforts to promote fire prevention education and assistance to residents. Foster support for the FireSafe program as well. Assist councils in obtaining funding and support, such as through National Fire Plan grants that are administered through State and Federal governments.

VI. Conclusion

> *"From September 22 to October 4 1970, fire raged through more than half a million acres of brush and Forest covered wildlands in California. These were 13 days of uncontrolled flames which killed people; consumed hundreds of homes built in or on the edge of the wildlands, and damaged thousands of other structures."* – **Excerpt, "Recommendations to Solve California's Wildland Fire Problem", Task Force on California's Wildland Fire Problem, 1972.**

In the fall of 1970, hot temperatures, dry fuels and a dry east wind ushered in a disastrous 13-day fire siege. Southern California experienced a devastating fire season, with astounding loss of life and property. California's Secretary for Resources formed a task force in 1972 to assess California's wildland fire problem and to recommend legislative or administrative actions to be implemented. Ronald Reagan was the State's Governor. Investigations were initiated. Findings were documented. Recommendations were made.

A decade later, in 1980, 325 homes were lost in a San Bernardino wildfire; in 1990, 641 structures were destroyed in the Painted Cave fire. In 1993 Southern California saw another hot and windy October bring wildfire and four people perished. Four hundred homes were lost in the Laguna fire alone, 1200 structures in total. Tragic human loss from wildfires had been seen in years past. In November, 1956, the Inaja fire burned 11 firefighters to death in a steep San Diego County Canyon. In November, 1966 the Loop fire killed 12 firefighters.

Many of the findings published in 1972 reflect circumstances and issues that still exist today. These include the need for building codes, urban planning, and zoning practices that integrate considerations for wildfire; wide-scale cross-jurisdictional fuels management, comprehensive pre-incident planning, improved interagency coordination, and public education. In many cases, findings and recommendations in this report parallel the 1972 report.

The 1972 report emphasized legislative, administrative, and government-focused, operational remedies to prevent and control wildfires. The plan did not address what is now recognized as a critical part of an overall strategy: the participation of wildland-urban interface residents, working in tandem with local, State and Federal governments to find and implement solutions. There are significant human and social considerations that come into play in the wildland-urban interface fire problem, and they must be fully acknowledged and addressed.

Circumstances surrounding the Cedar, Paradise and Otay incidents- dry fuels, high temperatures and hot winds; high-density urban areas in close proximity to wildlands; simultaneous, large incidents, and dwindling suppression resources –

were extreme. But these conditions were not without precedent. These circumstances occur regularly in Southern California and cannot be characterized as unexpected anomalies. With the use of contemporary forecasting technologies and long-term trend analysis techniques, the likelihood and severity of these events are fairly predictable.

Large wildland-urban interface fires, such as those seen in the fall of 2003, are becoming no less frequent. Fatalities, injuries, and loss of homes in these types of fires continue to occur as they have in the past, despite repeated review, analysis and recommendations that seem to always follow on the heels of such "unprecedented, worst-case scenarios."

Governments must begin to prepare, in earnest, for the worst-case scenario. This includes comprehensive disaster planning, improved multi-agency coordination and interagency training on the part of emergency response agencies. Fire-related considerations must be integrated into zoning, building codes, and large scale planning in southern California, just as other regions consider the likelihood of disasters such as hurricanes and floods in their overall municipal administration and planning programs.

Just as significantly, a meaningful preparedness effort requires a high level of proactive participation and engagement on the part of residents in the wildland-urban interface, including the establishment and maintenance of defensible space around homes and neighborhoods, and personal and community pre-incident planning.

APPENDICES

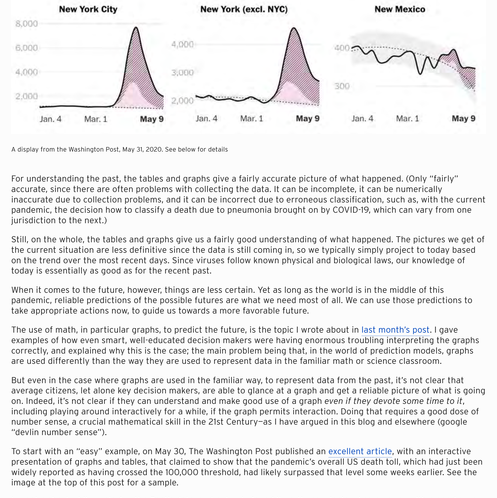
Appendix A: Interagency Workshops
Appendix B: Fire Behavior
Appendix C: Review Team
Appendix D: Glossary

CAN WE REALLY UNDERSTAND EXPONENTIAL GROWTH?

June 1, 2020 · Devlin's Angle

By Keith Devlin @profkeithdevlin

With a life-threatening pandemic, the only way to get a picture of the (invisible) virus's past, current, and future spread is by mathematics; in particular, tabulating data and drawing graphs. As a result, newspapers, magazines, and news websites are replete with graphs and tables these days. But how well is the average citizen – or the average lawmaker or civic administrator – able to adequately digest those displays and make good use of them?



A display from the Washington Post, May 31, 2020. See below for details

For understanding the past, the tables and graphs give a fairly accurate picture of what happened. (Only "fairly" accurate, since there are often problems with collecting the data. It can be incomplete, it can be numerically inaccurate due to collection problems, and it can be incorrect due to erroneous classification, such as, with the current pandemic, the decision how to classify a death due to pneumonia brought on by COVID-19, which can vary from one jurisdiction to the next.)

Still, on the whole, the tables and graphs give us a fairly good understanding of what happened. The pictures we get of the current situation are less definitive since the data is still coming in, so we typically simply project to today based on the trend over the most recent days. Since viruses follow known physical and biological laws, our knowledge of today is essentially as good as for the recent past.

When it comes to the future, however, things are less certain. Yet as long as the world is in the middle of this pandemic, reliable predictions of the possible futures are what we need most of all. We can use those predictions to take appropriate actions now, to guide us towards a more favorable future.

The use of math, in particular graphs, to predict the future, is the topic I wrote about in last month's post. I gave examples of how even smart, well-educated decision makers were having enormous troubling interpreting the graphs correctly, and explained why this is the case; the main problem being that, in the world of prediction models, graphs are used differently than the way they are used to represent data in the familiar math or science classroom.

But even in the case where graphs are used in the familiar way, to represent data from the past, it's not clear that average citizens, let alone key decision makers, are able to glance at a graph and get a reliable picture of what is going on. Indeed, it's not clear if they can understand and make good use of a graph *even if they devote some time to it*, including playing around interactively for a while, if the graph permits interaction. Doing that requires a good dose of number sense, a crucial mathematical skill in the 21st Century–as I have argued in this blog and elsewhere (google "devlin number sense").

To start with an "easy" example, on May 30, The Washington Post published an excellent article, with an interactive presentation of graphs and tables, that claimed to show that the pandemic's overall US death toll, which had just been widely reported as having crossed the 100,000 threshold, had likely surpassed that level some weeks earlier. See the image at the top of this post for a sample.

I spent a short while exploring the Post's data, and not only found it pretty convincing, I came away with a good sense of why the reporting had lagged so far behind the reality. I also learned a lot more as well. It was all there in the data. Everything needed was well presented, and I did not have to work hard to follow and understand.

That establishes that it can be a useful resource for someone, like me, who studied mathematics to the Ph.D. level and spent my entire career doing mathematics! But how well can others make use of this data? It was, after all, published in a national newspaper, hence intended to be used by mathematically-lay readers. Was a typical middle or high schooler—whose mathematics knowledge is still fresh–likely to be able to read and understand it, for instance?

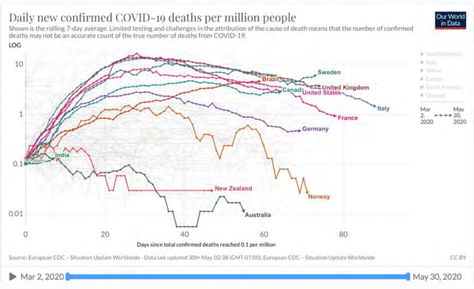
Fortunately, as I was working on this post, an answer dropped right in my lap, in the form of the May 31 post by Mike Lawler on his *Mikesmathpage* blog.

Lawler is a former university mathematician (he was on the MIT Putnam Exam team as a student) who left academia but found his way back into teaching when, in 2011, he began homeschooling his two children, now aged 16 and 14, regularly posting videos of his math sessions with them. Those videos now provide a good view of what learning math involves for school-age children when their teacher is a mathematician dad–a mathematician with a teacher's gift, I should add.

The May 31 post I just linked to presents the videos of the Lawler boys, with their father's help, trying to make sense of the Washington Post resource. Check it out and ask yourself if, for example, you think your Congressional representative could do as well. (If you suspect they cannot, you might want to make sure that they have a good math expert on their advisory team.)

And that was for an article intended to be read by an average reader of a quality newspaper!

I had a very different experience with the pandemic-data resource designed for a more quantitatively-proficient reader, published by the Oxford Martin School, the University of Oxford, and the Global Change Data Lab, analyzing the per capita coronavirus deaths around the world as the pandemic has progressed.



A graph from the Coronavirus Pandemic Data Explorer, produced by the Oxford Martin School, the University of Oxford, and Global Change Data Lab

It's a phenomenal resource. When people talk about Big Data, this is the kind of thing they have in mind. But coming to grips with this resource requires some expertise. It's provided for the experts–the people who advise leaders, lawmakers, administrators, and the like.

But to what degree can the experts digest the information that the site provides? On a technical level, an expert can surely make good, safe, productive use of such a resource. But how well do we *feel* (on an instinctive or emotional level) the data the graphs are presenting? Or does it remain forever theoretical?

Let me home in on just one aspect of the above graph: the vertical axis. It's a logarithmic scale. That's not surprising (to math types), since the spread of the virus is (during the initial pandemic phase) exponential. The logarithmic scale of the vertical axis compresses all the mortality figures downwards, in a progressive manner. With normal axes, the plotted points would all be leaping upwards with steeper and steeper slopes.

Exponential growth is something that the evolutionary development of our brains did not prepare us for. We do not have the kind of everyday-world, or kinesthetic, sense we can acquire for linear or polynomial growth. I certainly don't have that. Sure, I can do the math, and understand it in a technical way, and I can use that math appropriately when I need to. But unlike with addition or multiplication, the math of exponential growth does not *formalize* my brain's *natural* thought processes, it *extends* them (to a domain I have no everyday experience of, apart from *living through* exponential growth of viruses, climate change, and the like).

To illustrate the degree to which exponential growth can trick our minds, math educators often present students with a simple little puzzle called *the Lily Pond*.

After how many days is the pond half full of lilies?

Imagine you have built a swimming pond in the garden, and for decoration you drop a newly acquired lily in the middle. The vendor says you can expect that kind of lily to grow by doubling every day. So after one day there are two lilies, on day three there are four, then eight on the fourth day, and so on. On day thirty, you find that the entire pond is covered in lilies, and you can no longer swim. After how many days was the pond exactly half full of lilies (which is probably when the alarm bells would have rung in your mind that you need to pull some out so you can continue to swim in the pond)?

Many people get this wrong when presented with it the first time. If you are such a person, take solace that people get it right only because they have, either explicitly or implicitly, had the correct answer pointed out to them at some time in the past. I discussed all of this in my recent post in the *BrainQuake* blog, written with middle-school math education in mind. So you can check it out there. For now, I'll just say that the reason our brains lead us to the wrong answer is that we naturally think in terms of linear or polynomial growth, whereas the lilies grow exponentially.

Other than using puzzles like the lily pond to help people come to grips with the cognitive challenges posed by exponential growth, the best (actually only) other resource I know comes in the form of two short videos, one a recent remake of the other, a classic produced over forty years ago. Both show the growth of the exponential function $10^n x$ ("orders of magnitude"). Unfortunately, they only connect to our everyday cognitive experience for the first few values, so they don't really provide us a real sense of the growth. They just show exponential growth gets you *very quickly* to the beyond astronomical and the ultra microscopic, neither of which we can really grasp.

- Powers of ten, created by Charles and Ray Eames for IBM in 1977;
- Cosmic Voyage (original in IMAX format), directed by Bayley Silleck, produced by Jeffrey Marvin, and narrated by Morgan Freeman in 1996.

In other words, exponential growth is beyond our natural intuition and comprehension. That's why any phenomenon involving exponential growth is potentially dangerous, why mathematics provides the only tool we have to handle it, and why leaders and societies can do themselves and us possibly irreparable harm (including racial extinction) if they ignore what the math tells them.

FOOTOTE: To find out a bit more Mike Lawler, see the March 26, 2018 post on the AMS blog.

PREVIOUS
Talking about Women Leaving

NEXT
Sisters, How Y'all Feel? Brothers, Y'all Alright?

RETURN TO MATHVALUES HOMEPAGE

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Subject:	FW: Fanita Ranch FREIR - PWS Exhibits 19-24
Date:	Monday, July 25, 2022 5:12:50 PM
Attachments:	PWS Exhibits 19-24 Fanita FREIR July 2022.pdf

From: Save Fanita <savefanita@gmail.com>
Sent: Sunday, July 24, 2022 4:07 PM
To: Chris Jacobs <CJacobs@CityofSanteeCa.gov>
Subject: Fanita Ranch FREIR - PWS Exhibits 19-24

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Chico State student loses mother and Paradise home during the Camp Fire

Chico State student Christina Taft lost her mother in their Paradise home during the Camp Fire. Photo credit: Brian Luong

Yaritza Ayon
December 5, 2018 | 1,622 Views

Christina Taft woke up early, Nov. 8, to a neighbor urging her to evacuate. She initially didn't take the evacuation order seriously, but after showering she began to pack up her car. Christina said she packed for about an hour before noticing that her 66 year-old mother, Victoria Taft, was still in her pajamas and had hardly filled her suitcase.

Christina and her mother argued on whether to evacuate and ultimately her mother decided to stay put because she had not heard evacuation orders from officials.

"It took me an hour and a half to get through the town and the whole time I'm like angry and sad that I have all this stuff and not my mom in the car," Christina said. "I didn't understand why she stayed, it doesn't make sense to me."

Christina Taft, a Chico State student, who was affected by the Camp Fire sits outside her temporary home at University Village on Sunday afternoon. Photo credit: Brian Luong

Christina recalled the last major fire that occurred in and near Paradise, the Humboldt Fire which burned 23,344 acres and forced many residents to evacuate. Christina thought the community responded to the Camp Fire in a calmer manner than the Humboldt Fire where she remembers people evacuating urgently. The community's reaction led Christina to believe that was the reason for her mother not wanting to evacuate.

Christina also said she believes she saw a police car pass by her home while she packed up her car. She said the officer did not tell her to evacuate. Christina felt that the community could have done better job of warning the town of the disaster.

While Christina evacuated, she picked up a hitchhiker who told her he would help her go back for her mother. However, at that point, officials were not letting civilians back in to town.

"Other people, they got their family or maybe some of their pets, but they left their stuff,"Christina said. "(My story) is the opposite."

According to Christina, she called 911 several times to see if they could send someone to get her mother out, but nothing was done.

According to Town of Paradise Public Information Officer Matthew Gates, the dispatch center was overwhelmed with calls. Gates said that officers tried to help as many people as possible even after it was unsafe to do so.

"Preservation of human life is our priority, our number one goal," he said.

Over the next few days she went to multiple evacuation centers with the hope of finding her mother. After failing to hear any news, Christina decided to report her missing.

Victoria Taft. Photo Courtesy of Christina Taft

A DNA crosscheck on Thanksgiving revealed her mother had died in the fire.

Victoria was one of 88 people who died in Camp Fire.

Victoria Taft's body was found in the police tape area. Photo credit: Alex Grant

A few days after the fire, Christina emailed all her professors to update them on her situation. Her Business Entrepreneurship Professor Colleen Robb decided to step in and help Christina out.

"Well she sent all of her professors an email, just basically saying what happened and so of course I freaked out," Robb said. "I was like 'okay, what do you need, what's going on and where are you staying?'"

Taft at that time was staying with a close friend still trying figure out the status of her mom. Robb took Christina into her home until they could find her permanent housing. She also spoke with the Business Management Department about accommodating Christina.

The faculty from the department met and created a GoFundMe page for students from Paradise. They were able to give Christina $500.

Christina, an entrepreneurial business student, was upset with the lack of proper communication during the fire so she was inspired to create an Emergency Communication Platform so other communities don't face the same ordeal.

"One of the things that this issue brought up is maybe developing some sort of platform that allows for this kind of communication," Robb said.

Christina Taft walks up the stairs toward her University Village apartment on Saturday afternoon. Photo credit: Brian Luong

Christina is now provided with campus housing at University Village. Her housing and food necessities for the upcoming semester will be paid by an alumnus of the Business Management department.

Christina started her own GoFundMe page to help her cover funeral expenses and long-term housing for her final year at Chico State. So far she has raised over 5,000 dollars, but the process of rebuilding her life is just beginning.

Yaritza Ayon can be reached at newseditor@theorion.com or @ayon_yaritza on Twitter.

Camp Fire story Chabad jewish center chico Chico chico state Christina Taft Colleen Robb evacuees Paradise Victoria Taft Yaritza Ayon

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NEWSCALIFORNIA NEWS

‘I want my mom back’: Camp Fire survivor recounts final moments with mother

1 of 10

CHICO, CALIFORNIA – DECEMBER 13: Christina Taft looks at photos of her mother, Victoria Taft, Thursday, Dec. 13, 2018, at her apartment near California State University, Chico. Her mother died at home in Paradise, Calif., one of the 86 who perished in the Camp Fire. (Karl Mondon/Bay Area News Group)

By **BIANCA QUILANTAN** | bquilantan@chicoer.com | Chico Enterprise-Record
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PARADISE — They fought about everything that morning.

They argued about the neighbor, showering, paying the phone bill, packing the safe, talking to a woman named Mary, the bumper-to-bumper traffic outside, the severity of the fire and God.

They argued over evacuating.

Christina Taft fled Paradise with tens of thousands of others who managed to escape the path of the deadliest and most destructive fire in California's history. Her mother, Victoria Taft, stayed.

It was the last time they would see each other.

The Camp Fire roared to life on Nov. 8 around 6:30 a.m. near Pulga. By 8 a.m., the inferno had ripped across the Concow Valley and burned into Paradise, consuming the earth at the rate of a football field each second. Alice Blair, the only neighbor Christina and Victoria knew, knocked on their apartment door around 8:30 a.m. to warn them to get out. Blair's granddaughter had seen flames approaching while driving to work and called to urge her to evacuate.

There were no official calls, door knocks or evacuation alerts — just Blair's warning. Elliott and Copeland roads, where the duplex they lived in sat, were quiet. Christina said she saw police drive by, but they didn't say anything to anyone.

She hopped in the shower. Her mother stayed in her pajamas, picked up the phone to talk to a friend named Mary who lived in town and wasn't evacuating, and sat down to pay the AT&T bill.

Thirty minutes later, cars congested the streets, and smoke consumed the sky.

“It was pitch black — like night in the day,” Christina remembered.
Her mother began to lightly pack then stopped. Christina told her to look at the traffic and darkness outside. Victoria took a quick glance.
“Well, you took a shower,” she replied facetiously.
Christina packed the car, cursed and talked about the gravity of the situation. Victoria didn’t like that, so they fought.
“She just wanted me to be quiet,” Christina said. “She was recoiling… In denial… Didn’t think it was going to be that bad and said I needed to calm down.”
Christina continued packing. Victoria still wanted to wait until noon — or until they heard word from an official.
She handed Christina a jacket, some squash soup, pillows, an umbrella and her phone book. Christina grabbed photos, tubs with documents in them, clothes and the safe.
Victoria looked for her birth certificate to give to Christina, but couldn’t find it. Instead, she handed her an ID that expired nearly 10 years ago — before she partially lost her vision and had to stop driving.
Then the power went out.
Victoria lit candles and Christina blew them out. Her mother just lit more and stayed on the phone with Mary.
Feeling defeated, Christina left. She turned on her headlights and drove away around 10 a.m. She later learned the blaze had ravaged her home and claimed her mother’s life sometime between 11 a.m. and noon.

The drive

Much was said within those 90 minutes. Christina replayed the fight in her mind as she drove to Chico. She was angry and frustrated, yet the overwhelming feeling that she should've turned around to force her mother out of the apartment and into the car consumed her.

"I didn't give enough time, I was seriously packing up the car with all of this stuff — it was completely full and not enough of her stuff really," she said. "And then she didn't want me to take her laptop, like 'No don't touch that…Don't touch the suitcase!'"

She blasted music in the car so she wouldn't think, but there was one thought she couldn't shake.

"I probably wouldn't see her again," she said as her voice broke. "… And that was it."

She drove from Copeland Road to Nunneley Road to Pearson Road to Skyway. Vehicles crawled in gridlock traffic. She couldn't turn the car around.

"I had a chance to save her and I just didn't do it," Christina said.

The Tafts

They lived their whole lives together — just them two.

Christina, 25, is a business major at Chico State University and is expecting to graduate next fall. Her mother, though listed as Victoria Taft in reports of those who died in the Camp Fire, was known as Vicki by everyone.

Vicki, 66, was a stay-at-home mom. She was born Nov. 11, 1951 in Pennsylvania, but grew up in Los Angeles.

Her family was immersed in the entertainment industry. Vicki's mother did some modeling and her father was a cameraman. Her half-brother was a screenwriter.

She attended UCLA but never finished. She worked in real estate, and was an actress and a stunt double until she got injured on the set of "Dick Tracy" around 1989.

Her IMDB page says she is known for her roles in the 1991 film "Checkered Flag" and the 1981 film "Malibu Hot Summer," which also featured Kevin Costner. But, Vicki often wouldn't share the details of her past life with Christina. She would simply say she didn't remember.

When they moved to Paradise in 2008 after spending 12 years in Arizona and three in Southern California, Vicki joined the Lions Club for a time and enjoyed making friends at the free church lunches in town.

Vicki liked to watch old sitcoms — mainly comedies and romances, anything lighthearted. She was the type of person who would draw smiley faces on the manager's rent envelopes. She would research things online and could talk for hours on the phone. Often, she would leave notes around the house of things she had to do or even just thoughts. She wrote a book titled "Tara" once, Christina remembered, and enjoyed writing cards.

"We may have our ups and downs and all arounds but deep in my heart I'll always love you and cherish you!" Vicki scrawled in a card to Christina for her 23rd birthday.

It now hurts to see her mother's handwriting on cards and the backs of photos she managed to save.

For Christina's 25th birthday — less than a month before the fire — Vicki ordered a Hawaiian pizza and stuck a candle in it because Christina didn't like cake.

It would've been Vicki's birthday three days after the fire started.

They were never apart for long periods of time. Christina tried to move out once for six months in the fall of 2013 — it didn't work for Vicki. She missed her daughter, so Christina moved back in.

They would sometimes fight, especially when Vicki would rearrange things in Christina's room or when Christina would suggest they move to Southern California, but she had never

seen her mother recoil the way she did when they argued over evacuating.

Especially because it wasn't the first time they had to do so.

In 2008, the Humboldt Fire swept through southern Paradise and burned from Highway 32 across Skyway. It scorched 23,344 acres and destroyed 87 homes, but no one died. It was the same year Christina and Victoria had moved to Paradise into a place on Skyway.

"The first time it was her getting me out," Christina said. "But it was 10 years ago and she could drive and could see and we had calls to leave."

There were no calls this time.

While her mother was social outside the house, they mainly kept to themselves. They didn't have any family in Paradise to call and warn them like their neighbor's granddaughter had.

"By not having many friends or family, we were more at risk of dying," Christina said. "It was all on us to find out what was going on."

The search

The drive to Chico took nearly two hours. Once in the city limits, Christina pulled over to the side of the road and frantically started calling 9-1-1 to get help for her mother.

The Butte County Sheriff's Office logged her call at 1:26 p.m. It listed that her mother was on Copeland Road, blind, unable to drive and would need to be transported out.

Christina said she tried calling 9-1-1 for six hours.

"I told them she had disabilities and they were like, 'Why didn't she leave?'" She said. "She didn't know it was a mandatory evacuation and they were questioning me on why she didn't go."

Every time she would explain why her mother didn't go with her, Christina would become more frustrated. She began to text her friends to say that her mother was probably going to die.
She soon met up with a friend she had made at the university. With her mother's expired ID in hand, Christina went searching for Vicki at the evacuation shelters and put her on the missing list.
Around 6 p.m., on the way to the Oroville Nazarene Church shelter, they saw a California Highway Patrol officer on the side of the road. She pulled over to ask him for help. He called her evacuation request into the command post.
"I didn't realize you could only do it in person or they wouldn't care," she said. "I realized that too, but you know too late… Hours too late."
They checked the last shelter around 10 p.m. — nearly 12 hours after Christina had left Vicki behind. There, Christina said she could feel her mother's waves of energy around her.
She knew her mother was dead. Her friend told her to keep looking.
Christina received a call a few days later from Alhambra County officials to go in for a DNA swab — remains had been found on the property.

The call

Thanksgiving morning was when Christina was told the remains found on the property matched her DNA. But officials wouldn't tell her if they were found inside or outside of their apartment. There were two calls.
She was driving to Nevada City to spend Thanksgiving with a Paradise adopt-a-family when officials first called her to confirm the DNA match. The second call — though Christina doesn't fully remember it — was to confirm Vicki's time of death.

Officials told her they suspected the fire had hit Copeland Road between 11 a.m. and noon.
“I only had one to two hours to get her out,” Christina said. “When I was calling it was pointless because it was too late anyway.”
Vicki’s name was released on the fatality list the Monday after. Christina still didn’t know if her mother had died inside or outside of their apartment.
It was only in person that she saw the caution tape roping off a block of the space where her mother’s body was found. It was where their living room once was, Christina said. Probably by the window.
“She probably couldn’t get out,” she said. “It was disgusting imagining her dying.”

The return

Vicki liked Paradise. After living there for 10 years, she didn’t want to leave.
“She would’ve been fine with just me and her, her whole life and I was getting to be fine with that too and then this happened,” Christina said.
She went up to Paradise twice to see the remains of their two-bedroom apartment and doesn’t want to go back.
“There’s nothing there,” she said.
All that was left in the rubble of the apartment they had lived in for seven years were broken cups — including one that had “love” written on it. Christina had given it to Vicki as a gift for her birthday or Mother’s Day.
There was also the caution tape.
“Twice is enough,” she said.

The life after

Christina’s memory of Nov. 8 and her conversation with her mother a month later is sparse. But, she thinks about it

constantly and runs through scenarios of what she could have done to get her mother to evacuate.

She could've disconnected the phone. She could've called 9-1-1. She could've said, "I love you, I don't want you to die — begging her."

The first two weeks she was angry with law enforcement officials for not doing enough. The second two weeks she began to blame herself.

"80 percent of me was saying no and then that 20 percent that wanted to just run away and think about myself won," Christina said. "Now it's just that 80 percent of me that's just dying inside every day."

Days following the fire, Christina watched and read reports of people fighting off the fire with hoses and surviving. She saw videos of people driving through raging flames and surviving. She said she didn't know she could do that.

"I thought if fire got in the street, you'd die right then, but apparently not with all these other people staying with fire in their yards," she said. "It's my fault that I didn't stay.

"Everyone says no, but I was responsible for her…They got their people out — their family out — and I just left."

Christina now spends most days getting to know her mother. She reached out to her estranged half-uncle in Arizona, Vicki's friends, and searched for movies she was in. Most recently, she watched "Malibu Hot Summer."

"I had asked her before and she said no she wasn't in it," Christina said as she cracked a half smile. "I watched it and it was her — just thinner and younger, you know?"

Christina is staying at University Village until May — thanks to a donation from a Chico State business program alumnus — but she will need to find a place to stay while she finishes her degree in the fall.

After graduation, she wants to move to Southern California or Arizona and maybe work to develop an emergency communication platform prototype to improve centralized communication during emergencies. She wants to name it after her mother.

Often, she is busy gathering resources or going to school. At first, her financial situation made her feel insecure, she said, but now she mostly feels guilt.

“I left my mom there and she died, that is the worst thing I could have ever done,” Christina said. “I’m going to regret this my entire life.”

The memorial

They never talked about what Christina would do if her mother died.

“It was just her and me,” she said. “She didn’t have insurance or any of that stuff — we thought it was creepy. She didn’t expect to die.”

A memorial is scheduled for Jan. 12, 2019. East Lawn, a memorial and mortuary service in Sacramento, donated their cremation and memorial services. Cremation was always what Vicki’s family had done and Christina doesn’t want to leave her mother in Butte County when she leaves after graduation.

Many people have been helping her plan the services, but it is difficult for her to process the details.

“That was really hard for me to look at and finalize it,” she said. “I want my mom back all the time constantly and I can’t do anything — it’s a nightmare.”

Christina doesn’t know who will come to the memorial — her half-uncle and some adopt-a-family friends in Sacramento might. Vicki’s phone book is full of first-name-only entries, making it difficult to find her friends. Some aren’t in the phone

book, including Mary, the last person Vicki probably talked to on the phone that day.

The memorial in Sacramento will be a tribute to Vicki's life. Christina also wants to have one in Chico in the spring for her mother's friends in Paradise to attend. She wants her mother to be remembered through photos and stories — even though it won't bring her back.

"She'd rather be alive than sit in articles, she'd want to just be with me — alive," Christina said. "She had things to do, she had a life."

If the Camp Fire hadn't happened, Vicki Taft would have turned 67 that weekend. She would have seen her daughter graduate, get married and have grandchildren — she had already bought the baby clothes.

Christina's eyes welled with tears. She had forgotten about the baby clothes — but now they were gone too.

"She didn't deserve that ending," Christina said.

Memorial service

Saturday, Jan. 12 at 3 p.m.East Lawn Memorial Park & Crematory4300 Folsom Blvd., Sacramento

A second memorial in Chico will be scheduled later in the spring. Anyone is welcome to attend either memorial service.

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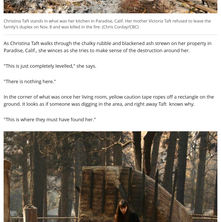
Bianca Quilantan I Reporter

World

'This is where they must have found her': Woman who refused to flee California fire is one of the dead

Christina Taft couldn't persuade her partially blind mother to leave their home

Briar Stewart · CBC News · Posted: Nov 22, 2018 4:00 AM ET | Last Updated: November 22, 2018



Christina Taft stands in what was her kitchen in Paradise, Calif. Her mother Victoria Taft refused to leave the family's duplex on Nov. 8 and was killed in the fire. (Chris Corday/CBC)

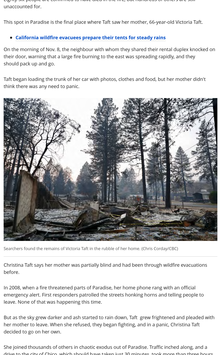
As Christina Taft walks through the chalky rubble and blackened ash strewn on her property in Paradise, Calif., she winces as she tries to make sense of the destruction around her.

"This is just completely levelled," she says.

"There is nothing here."

In the corner of what was once her living room, yellow caution tape ropes off a rectangle on the ground. It looks as if someone was digging in the area, and right away Taft knows why.

"This is where they must have found her."



Christina Taft stands in the rubble of the duplex where she lived for seven years. (Chris Corday/CBC)

This is the first time the 25-year-old has returned since she fled her home nearly two weeks ago when the Camp Fire destroyed nearly 13,000 structures, leaving entire neighbourhoods in the northern California community of about 27,000 unrecognizable.

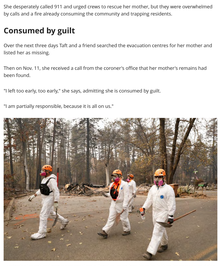
Eighty-six people are confirmed to have died in the fire, but hundreds of others are still unaccounted for.

This spot in Paradise is the final place where Taft saw her mother, 66-year-old Victoria Taft.

- **California wildfire evacuees prepare their tents for steady rains**

On the morning of Nov. 8, the neighbour with whom they shared their rental duplex knocked on their door, warning that a large fire burning to the east was spreading rapidly, and they should pack up and go.

Taft began loading the trunk of her car with photos, clothes and food, but her mother didn't think there was any need to panic.



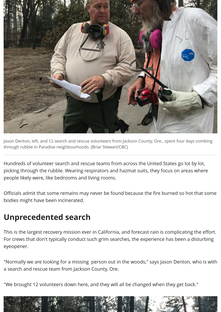
Searchers found the remains of Victoria Taft in the rubble of her home. (Chris Corday/CBC)

Christina Taft says her mother was partially blind and had been through wildfire evacuations before.

In 2008, when a fire threatened parts of Paradise, her home phone rang with an official emergency alert. First responders patrolled the streets honking horns and telling people to leave. None of that was happening this time.

But as the sky grew darker and ash started to rain down, Taft grew frightened and pleaded with her mother to leave. When she refused, they began fighting, and in a panic, Christina Taft decided to go on her own.

She joined thousands of others in chaotic exodus out of Paradise. Traffic inched along, and a drive to the city of Chico, which should have taken just 30 minutes, took more than three hours.



An undated photo of Victoria Taft, who was partially blind. (Submitted by Christina Taft)

On the way, she saw flames burning through part of Paradise and realized the grave danger her mother was in.

She desperately called 911 and urged crews to rescue her mother, but they were overwhelmed by calls and a fire already consuming the community and trapping residents.

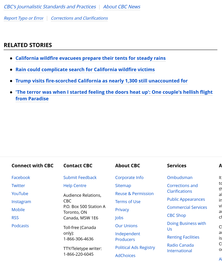
Consumed by guilt

Over the next three days Taft and a friend searched the evacuation centres for her mother and listed her as missing.

Then on Nov. 11, she received a call from the coroner's office that her mother's remains had been found.

"I left too early, too early," she says, admitting she is consumed by guilt.

"I am partially responsible, because it is all on us."



Hundreds of search and rescue personnel are in Paradise, going from lot to lot, looking for anyone who didn't make it out. (Chris Corday/CBC)

A flawed list of casualties

A list of casualties published by the Butte County Sheriff's Office shrinks and swells each day, depending on who is found and who is listed as missing.

The department admits the list is flawed. Some names are on there twice and others are misspelled, but Butte County Sheriff Kory Honea says it will take time to go through the backlog of calls and emails of desperate family members and friends.

"We are clearing hundreds of hundreds of names, so I still support the decision to get the data out even if it wasn't perfect," Honea says.

- **Rain could complicate search for California wildfire victims**

All the properties in the community were quickly searched after the fire, and now crews are looking for anyone who might be buried, trapped under a wall or a ceiling that collapsed.

Jason Denton, left, and 12 search and rescue volunteers from Jackson County, Ore., spent four days combing through rubble in Paradise neighbourhoods. (Briar Stewart/CBC)

Hundreds of volunteer search and rescue teams from across the United States go lot by lot, picking through the rubble. Wearing respirators and hazmat suits, they focus on areas where people likely were, like bedrooms and living rooms.

Officials admit that some remains may never be found because the fire burned so hot that some bodies might have been incinerated.

Unprecedented search

This is the largest recovery mission ever in California, and forecast rain is complicating the effort. For crews that don't typically conduct such grim searches, the experience has been a disturbing eyeopener.

"Normally we are looking for a missing person out in the woods," says Jason Denton, who is with a search and rescue team from Jackson County, Ore.

"We brought 12 volunteers down here, and they will all be changed when they get back."

The search and rescue team takes a second look through what was Christina Taft's home. (Briar Stewart/CBC)

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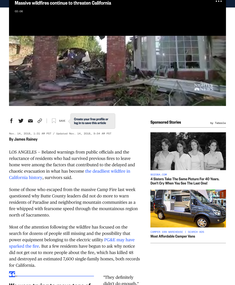
Paradise fire survivors say warnings were too little, too late

'They definitely didn't do enough,' said Christina Taft, whose 67-year-old mother has been missing since last week.



Nov. 16th, 2018, 11:48 PM ET / Updated Nov. 17, 2018, 9:04 AM ET

By Jonna Rainey

LOS ANGELES — Related warnings from public officials and the reluctance of residents who had survived previous fires to leave home were among the factors that contributed to the delayed and chaotic evacuation in what has become the deadliest wildfire in California history, survivors said.

Some of those who escaped from the massive Camp Fire last week questioned why Butte County leaders did not do more to warn residents of Paradise and neighboring mountain communities as a fire whipped with hurricane speed through the mountainous region north of Sacramento.

Most of the attention following the wildfire has focused on the search for dozens of people still missing and the possibility that power equipment from the utility Pacific Gas and Electric Co. may have sparked the fire, but a few residents have begun to ask why notice did not get out to more people before the fire, which has killed 48 and destroyed an estimated 7,600 single-family homes, both records for California.

> **We were trying to move tens of thousands of people out of an area very rapidly with the fire coming very rapidly. And no matter what your plan is to do that, no plan will ever work 100 percent when you are dealing with that much chaos."**

"They definitely didn't do enough," said Christina Taft, whose 67-year-old mother has been missing since the fire. "She didn't expect it to be that bad. She expected someone would be calling, or something, if it got bad, but they didn't."

"They were negligent. They just let them go," said Taft, who had to be saved from her mother, Victoria, since last Thursday. "There is a reason all these people are dead."

A resident of Magalia, about 4 miles west of the fire's starting point, confronted Butte County Sheriff Kory L. Honea and other officials Wednesday about why he and his neighbors could not get information about the dangerous blaze, a full three hours after the news first responded to the ignition point, near Highway 70 in Pluman National Forest.

"We use the emergency broadcast system for a tornado warning. But this is a deadly fire," said the man, who was not identified by county officials whom he addressed at the meeting in Oroville. "I don't remember any alert coming over my radio. ... People in the community are freaking out, you need to get some information up here."

The Butte County sheriff's office said it did deliver notifications about the fire danger: 3,527 by email, 25,643 via phone (to both land lines and cellular devices) and 5,445 by text message.

"I wish we had the opportunity to get more alerts out, more of a warning out, but unfortunately we didn't," sheriff Honea said the public meeting on Monday.

At a news conference Tuesday evening, Honea stressed that the fire's unusually swift progress south and west into Magalia, Paradise and other mountain communities made timely notification difficult.

"You have to keep in mind that this was an extraordinarily chaotic and rapidly moving situation. The fire started in a remote area. It takes awhile for our fire resources to get there and from that point, they're overwhelmed with the fire," Honea said. "We're also in the going to reflect populated areas, that takes time," Honea said.

He added that it's possible some people were warned and didn't immediately act to get out of harm's way. "We were trying to move tens of thousands of people out of an area very rapidly with the fire coming very rapidly. And no matter what your plan is to do that, no plan will ever work 100 percent when you are dealing with that much chaos."

Honea, who took office four years ago, also suggested that emergency officials have to be concerned not to over-burden people with excessive or unneeded evacuation orders. He said the region had already lived through evacuations from earlier fires and last year's threatened collapse of the Oroville Dam, which caused nearly 200,000 people to flee.

"So that takes a toll on people," Honea said. "I don't want to ever get into situation where people begin to stop paying attention because they feel like we are ordering evacuations for no cause or for very little cause."

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NEWS

Like other counties, Butte has a system that allows residents to sign up for "reverse 911" telephone alerts in times of emergency.

Savannah Rauscher told The Sacramento Bee that by the time she got the 911 alert at 8:30 a.m., embers and dust were already flying around her family's Edgewood Lane home.

"We ran a wall of fire," she told the newspaper. "Trees were glowing at both ends and it was probably moving like 60 yards every couple minutes. ... I had no idea it could be that fast."

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Rauscher and her husband soon found themselves in a long and unmoving line of cars. Her husband pulled into what normally would have been the oncoming traffic lane to escape, saying, "We're not going to die like this." Rauscher said she waved other cars to follow along to safety.

High on the ridges above the Sacramento Valley, many homes do not have any telephone service, or access to Wi-Fi. It's unknown how much that isolation may have prevented residents from getting word of the fire.

Risa Johnson, a reporter for The Chico Enterprise-Record, said reporters in her newsroom also wondered how many residents might not sign up for the reverse 911 warnings because of concern about giving the government their personal information. The Sierra Nevada foothills are home to some who moved there precisely because they wanted to get away from intrusion by public officials.

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But even signing up for the warnings was no guarantee they came through. Johnson said her aunt, Peg, applied for the 911 alerts, but received no notice at her Paradise home of the Camp Fire. "She said she didn't get anything," Johnson said. "It was friends and family calling, or neighbors coming by. That's how many people found out."

Taft said she argued fiercely with her mother for more than an hour, trying to convince her to flee. But there were no sheriff's deputies forcefully ordering everyone out. Her mother, who is 5 feet tall and weighs 100 pounds, refused to leave.

After Brentonna last year devastated broad swaths of Sonoma and Napa counties and blackened a record number of acres in Santa Barbara and Ventura counties, many people reported they did not receive emergency warnings.

Patients were being evacuated from the Feather River Hospital at a Funeral Home during the Camp Fire in Paradise on Nov. 8. Justin Sullivan / AFP - Getty Images

Lewis said his county has begun to edit its notification system as a result — sending word of evacuations over land lines, cellphones, social media and traditional news outlets. Still, the system is not foolproof. Just 12 percent of the county's residents have opted to go to receive so-called reverse 911 notifications in emergencies, despite last year's fires and a subsequent debris flow that killed 23 people. Even a system designed to push warnings to all cellphones, tested recently by the Trump administration, did not reach everyone.

Lewis said he had two cellphones side by side during that test, both serviced by the same phone company, and only one received the emergency alert. "And we don't know the reason why."

An exacerbating factor in Butte County may have been the advanced age of many residents. Paradise and its environs are popular with retirees, some of whom are reluctant to leave home because of mobility problems. Feather River Hospital had to rely on private cars and trucks to get out many of its patients, just ahead of the flames.

Courtney Wright, a medical assistant, said her 91-year-old father was one of those who refused to leave. He was finally persuaded to evacuate. "We have had so many fires up there that it's kind of like it's nothing," said Wright. "It's just on to the next." When the house behind his caught on fire, he propane tank exploding, Wright's father finally decided it was time to move on.

Residents did not find an easy path to safety. The narrow mountain roads out of the communities quickly jammed, forcing some people to leave their cars and run for their lives. The incinerated corpses of others, still in their cars, presented ample evidence that the alarm wasn't raised in time.

As Honea was pressed for more answers at Monday's meeting, he acknowledged that thoughts of those who could not escape troubled him. "I understand it was absolutely chaotic," the sheriff said. "I will probably never be able to give you an answer that satisfies you."

Jonna Rainey

Jonna Rainey is a former reporter for NBC News.

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NEWS: GOVERNMENT

San Diego officials said rural homes were safe from fires. They were listening to developers.

by Camille von Kaenel
June 15, 2022 Why you can trust inewsource

Homes in the Harmony Grove Village community in Escondido are shown on May 17, 2022. (Zoë Meyers/inewsource)

One by one, developers sold local government officials in recent years on the promise of adding thousands of much needed homes to the San Diego region by placing them in the rural fringes of North and East County – including in areas where brush fires had recently burned down homes and clogged evacuation routes.

The environmental reviews, required by state law, repeatedly said they were safe. The projects got the OK from local fire officials and elected officials.

But in at least six major developments, critics say there was a problem. All of these reviews were done by consultants hired by the very developers who want to build the homes. In six lawsuits brought in the last four years, challengers suing to block the developments said the reviews were flawed and incomplete, distinguished by a failure to fully analyze how new housing would clog evacuation routes or lead to more fires.

Why this matters

The San Diego region continues to fall short of its goals to develop more housing for its residents. But much of the county is at high wildfire risk.

Now, those challenges are increasingly gaining traction, notching incremental victories in court and reshaping how local officials review development in fire-prone areas.

In February, the San Diego County Board of Supervisors adopted a new policy that county leaders say will limit new development in rural high fire risk areas.

A San Diego County spokesperson told *inewsource* the county is also considering overhauling how it does the reviews, including the county's reliance on developers to study projects – but nothing has changed so far.

Homes from the Harmony Grove Village community in Escondido are shown in front of an area proposed for a new housing development, May 17, 2022. (Zoë Meyers/inewsource)

In three recent cases, judges have ruled that local officials failed to fully analyze the wildfire risks of large-scale housing developments, resulting in those projects being blocked, some with more finality than others.

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- In the Harmony Grove Village South project near Escondido, which promised 453 homes, a superior court blocked the project out of fire safety concerns. However, an appeals judge disagreed with the lower court, saying fire officials have discretion to deem projects safe, though the judge blocked the development on other grounds related to emissions.
- A court also blocked the Fanita Ranch development in Santee, where nearly 3,000 homes were promised. The developer is working with local officials to redo the review.
- A project called Otay Ranch Village 14, promising 1,119 housing units east of Chula Vista, also was blocked in court. The decision has been appealed. But the project faces a powerful opponent: California Attorney General Rob Bonta has joined plaintiffs in arguing that local officials failed to fully analyze the wildfire risks of the project.

"As these mega-disasters become the norm, it is more critical than ever that we build responsibly," Bonta said after the project was blocked, referring to fires fueled by climate change. "We can't keep making the same mistakes."

"Local governments have a responsibility to address wildfire risks associated with development projects at the front end," he added. "Doing so will save dollars – and lives – down the line."

Other recent cases highlighting wildfire risks have ended differently.

One project facing a lawsuit, Newland Sierra, was blocked by voters in a 2020 referendum. In another case, against Valiano, the plaintiffs concerned about wildfire risks reached a confidential settlement. A third lawsuit, against Otay Ranch Resort Village 13, remains ongoing.

Developer consultants feed officials information

The blocked projects drew criticism in part because they required exemptions from the general plan, which governs safe development in the county.

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Developers have a great deal of influence on county staff and officials. Local officials hand off the task of analyzing the safety of projects to consultants hired by the developers. Inherent in that exchange, critics say, is potential for conflicts of interest that do not serve the future residents of these developments if officials defer to the consultants and do not conduct independent fire-safety reviews.

Dan Silver, the CEO of the Endangered Habitats League, which has sued over rural development projects, said the result is that the environmental reviews sometimes don't provide a full picture to the public – especially when local government officials don't dig deeper.

"They do review these (environmental reports), but they don't give them a hard look," Silver said. "They don't question what the applicant's consultants come up with. They don't do their due diligence and hire independent experts on things like traffic, on things like fire evacuation, endangered species needs and requirements. They accept whatever the developer puts in front of them."

Country Club Drive in Escondido, shown in this photo, is the fire evacuation route for the community of Harmony Grove Village, May 17, 2022. (Zoë Meyers/inewsource)

inewsource reviewed thousands of pages of public records related to six housing projects flagged by lawsuits as problematic.

The environmental reviews, which can take months to write, are in-depth and cover hundreds of pages. But they also leave some key questions unanswered, including how quickly existing residents might evacuate in the case of a brush fire or whether more residents would lead to more fire starts.

Emails show county staff working closely with developers and their consultants to smooth the review process, with planning staff feeding fire officials talking points they need to cover when presenting projects to the county leaders for approval.

When asked by *inewsource* about criticism of how the projects were approved, county spokesperson Donna Durckel defended the process, saying working closely with the project developers and consultants is essential to processing applications and that projects are not brought before decision makers until staff is satisfied that all requirements are met.

Asked how often the county seeks an independent review, Durckel said for some projects fire officials will use an independent consultant to evaluate the project's safety. She did not specify how often that happens.

Neighbors who fled fire sue project

Susan Williams understands the appeal of living in a brand-new development in the hills, but her enthusiasm has dimmed as she learns more about the wildfire risk.

Williams bought a home in a new development near Escondido in 2016.

Susan Williams walks along a path in the community of Harmony Grove Village in Escondido, May 17, 2022. (Zoë Meyers/inewsource)

She later learned that a brush fire had torn through the area while it was still being graded in 2014. Recently, her home insurance jumped, which she attributed to insurers shying away from the high fire risk in the area.

"They know what the developers won't admit and what the government officials won't admit," Williams said. "It's not a good risk. It doesn't pencil out."

She said she may not have moved in at all had she known about the wildfire risk and fears having to flee a wildfire along a narrow two-lane road.

During the 2014 Cocos Fire, neighbors were stuck in gridlock traffic while attempting to evacuate – and that was before 700 homes were built in Williams' neighborhood and before developers pitched doubling that number.

Consultants for the developer of Harmony Grove Village South analyzed evacuation routes for the project – but counted only the people fleeing the proposed developments, not all existing residents. They estimated it would about 90 minutes to evacuate.

JP Theberge has lived in Elfin Forest near Escondido for 11 years. He is a member of a local group that advises the county on planning. The group hired an expert, conservation consultant Matt Rhan, to evaluate the proposed evacuation plan, and later sued the development.

Rahn questioned the road's design, saying the road should be wider for a much longer stretch, and said the evacuation would take longer than consultants determined. He also said the review should have considered other factors, such as how long it would take to evacuate people with disabilities and get everyone out of harm's way.

"The question is, which experts do we listen to? At the end of the day, you're relying on someone whose income depends on this project getting through," said Theberge.

In the case against Harmony Grove Village South, an appeals judge ruled that the Board of Supervisors had the discretion to choose to believe its fire officials over outside experts. The judge also ruled against the project for failure to provide affordable housing and mitigate greenhouse gas emissions.

Susan Williams explains the history of development in the community of Harmony Grove Village in Escondido, May 17, 2022. (Zoë Meyers/inewsource)

But in other projects that have been challenged, the courts have flagged issues with the integrity of the environmental reviews ultimately approved by fire officials, pointing to gaps in how information was analyzed and presented to the public.

For example:

- In Oct. 2021, the San Diego County superior court judge who tentatively struck down the Otay 14 development east of Chula Vista agreed with plaintiffs who said local officials failed to analyze how adding people to the area could lead to more fires because most fires are caused by humans.

The developer's consultant doing the review acknowledged in a memo that increasing population in Southern California would lead to more human-caused fires, but the final environmental review, according to the judge, "does not acknowledge an increase in risk of wildfire ignition as a result of more humans being in the area from the project."

The case is under appeal.

- On March 3, 2022, another San Diego County superior court judge struck down the Fanita Ranch plan for nearly 3,000 homes in Santee in a scathing rebuke of the city of Santee's evacuation analysis. Of the three evacuation routes identified, one dead-ends in a park.

Additionally, the city did not model evacuation scenarios or estimate evacuation times, according to the judge, who added that what methodology the consultants did use to analyze the safety of evacuations was "problematic."

"The public was not informed as to the extent to which the project would expose them to significant risk of loss, injury or death regarding evacuation timing," Judge Katherine Bacal wrote in her opinion. "Nor does the plan inform as to the risk of injury or death if residents are instructed to remain on site while the fires burn around them."

San Diego leads similar regions in risky development

The fight over what fire safety should look like in the court-blocked housing developments underscores a major challenge facing local leaders and developers.

San Diego needs more housing to combat a scarcity of homes and climbing rents and home prices. Meanwhile, the risk of brush fires blankets much of San Diego County.

Proposing solutions, developers say they can build housing safely in areas at risk for brush fire by meeting and exceeding modern fire codes. In some cases, they argue, developments can increase fire safety by bringing new fire stations to the area and reducing flammable vegetation.

Lori Holt Pfeiler, the president and CEO of the San Diego Building Industry Association, said the developments that have been sued and delayed over wildfire risks would help balance home prices in the San Diego region and provide homes to people stressed about not having a home for raising their families.

Holt Pfeiler said she supports improving the review process to limit lawsuits, but she also believes the environmental reviews have been thorough. Still, lawsuits against developments will likely continue, she said, adding that's unfortunate.

"I think it's a huge detriment that we don't support the housing that we need," Holt Pfeiler said.

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by Camille von Kaenel June 29, 2021

inewsource reached out to five San Diego County supervisors, including Chairman Nathan Fletcher, for their input on the county's development practices and only one provided a response. Supervisor Terra Lawson-Remer pointed to the change in the makeup of the board as a sign of positive change.

"The old guard Board of Supervisors too often prioritized the special interests of big developers over the safety of County residents and our environmental quality of life," she said.

The San Diego region does stand out statewide in how much housing is approved in high fire risk areas.

According to an analysis by University of California, Berkeley, both the city and county of San Diego approved more housing in fire prone areas than the city and county of Los Angeles and communities outside of Sacramento, which were selected because of their rapid development beyond major cities.

Courts have also recently ruled against projects in Los Angeles and Lake counties because of their wildfire risk. But the San Diego region's topography and geography, characterized by a lot of open space, has led to unique development pressures and several projects where fire risks haven't been adequately assessed, according to Peter Broderick, an attorney at the Center for Biological Diversity who has sued some of the developments.

"What we're seeing (in San Diego County) is a particularly egregious sort of set of examples of something that's actually happening in lots of places in California," he said.

Type of Content

News: Based on facts, either observed and verified directly by the reporter, or reported and verified from knowledgeable sources.

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Camille von Kaenel is an investigative reporter focused on environment and energy in San Diego and Imperial counties. Her position is partly funded by Report for America, a national program that supports local journalists. Previously, she covered growth and development in San Diego County’s backcountry… **More by Camille von Kaenel**

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LILAC FIRE
AFTER ACTION REPORT 17

Photo: Jeff Hall Photography, CAL FIRE

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LILAC WILDFIRE
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Acknowledgements

The following San Diego County agencies contributed to this report:

CAL FIRE/San Diego County Fire
2-1-1 San Diego
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City of Carlsbad
City of Oceanside
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THIS REPORT INCLUDES COMMENTARY ON COMPONENTS OF THE REGIONAL RESPONSE BUT IS NOT INTENDED AS A COMPREHENSIVE ANALYSIS FOR ALL RESPONDING AGENCIES. THE REPORT FOCUSES ON THE RESPONSE OF COUNTY OF SAN DIEGO (COUNTY) DEPARTMENTS WITH RECOGNITION THAT CITIES AND RESPONDING AGENCIES WILL CONDUCT THEIR OWN AFTER ACTION PLANNING PROCESS.

Photos of the Lilac fire courtesy of San Diego County Sheriff, CAL FIRE and Jeff Hall Photography

Executive Summary

Photo: Jeff Hall Photography, CAL FIRE

The Lilac Fire in Northern San Diego County was a destructive and fast-moving conflagration that started in severe Santa Ana conditions, with single digit humidity and strong, gusty winds.

Adding to the danger, when the fire started the morning of Dec. 7, 2017, the region had been experiencing its driest fall and December since 1929. Plant life was dead, dry and combustible. Winter Santa Anas are fairly common in Southern California, but conditions at Lilac Fire's start were exceptionally dangerous.

The Lilac Fire seriously injured two people who suffered burns; destroyed 114 houses and damaged 55; and killed more than 45 horses. However, as destructive and disruptive as the disaster was, it could have become much larger and destroyed thousands of homes. Instead, thanks to a combination of a break in severe winds, and a massive firefighting and emergency management response, the fire's forward progress was largely stopped within 12 hours, with no loss of life, and never growing beyond the initial wind-driven surge. The success of the emergency response can be directly attributed to the exceptional level of preparation, collaboration, and resources San Diego County brings to bear in a wildfire, including a second-to-none fleet of locally available firefighting aircraft and well-equipped and trained first responders. Likewise, partnerships with cites, community organizations and the spontaneous care and generosity of residents made the Lilac Fire response and ongoing recovery efforts a success.

Background

San Diego County's strong wildfire and emergency management capability are essential in a region that has seen two of the largest wildfires in state history in the 2003 and 2007 wildfires. Since 2003, the County's Board of Supervisors has spent more than $460 Million on local firefighting resources − helicopters, engines, response personnel, and communications infrastructure − that are used to attack wildfires. Likewise, regional agencies regularly work together and practice for emergencies while building their own local capabilities.

California fires, 2017

The dangerous and tragic nature of California wildfires was highlighted in the months and days leading up to the Lilac Fire. In early October, 44 people died in wildfires that consumed more than 200,000 acres in 11 Northern California counties, including Napa and Sonoma. The Thomas Fire in Ventura and Santa Barbara counties had started Dec. 4 and quickly spread, consuming ever more acres and prompting mass evacuations.

San Diego County residents and responding agencies, then, were on heightened alert when the National Weather Service issued a Red Flag warning for the region starting Monday, Dec. 4. By Tuesday, Dec. 5, the forecast warned that extreme and unprecedented December fire danger was imminent, with wind gusts of up to 100 mph expected on Thursday, Dec. 7.

The Thomas Fire would take more than six weeks to contain and go on to become the biggest wildfire in state history. It claimed the life of CAL FIRE San Diego Unit Fire Apparatus Engineer Cory Iverson, who was with his crew assisting on the state incident.

Photo: Jeff Hall Photography, CAL FIRE

Readiness

The County of San Diego and other agencies took important steps to prepare for the danger. These actions before the Lilac Fire were critical to the effective response.

The County's Emergency Operations Center activated at 5 a.m. on Wednesday, Dec. 6, to monitor for fire starts and coordinate readiness with the 2-1-1, the American Red Cross, the Sheriff's Department, the Department of Animal Services, County Communications, and other departments and regional and state agencies.

The County and CAL FIRE coordinated public messaging to provide the community with important information about the fire risk and actions they could take to prepare. On Dec. 6, San Diego Gas & Electric de-energized power to the rural East County, following its policy for dangerous wind events. Two American Red Cross Shelters in Escondido and El Cajon opened for residents without power. These two fully staffed shelters, opened in advance of the Lilac Fire, provided immediate safe refuge to evacuees.

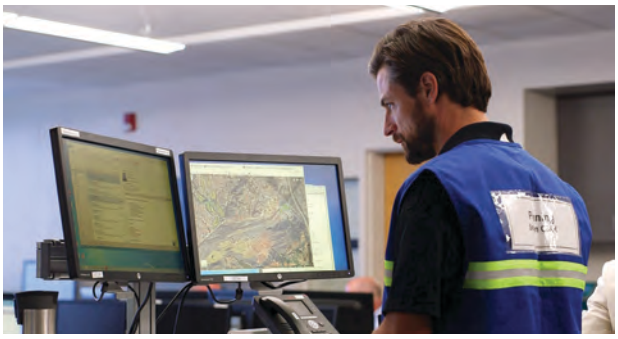
CAL FIRE and the County Fire Authority mobilized all available resources two days prior of the Lilac fire. Their actions included:

- **Contracting to bring a Type 1 Crane Helicopter to the region as part of the County's "Call When Needed" program.**
- **Coordinating with the Navy and Marines to ready military aircraft for firefighting.**
- **Staffing CAL FIRE and San Diego County Fire Authority stations and equipment at peak levels.**

Photo: Jeff Hall Photography, CAL FIRE

Incident

The Lilac Fire east of Bonsall was reported at 11:15 a.m. on Dec. 7. It started just west of Interstate 15 and south of Highway 76, and its cause is under investigation. Santa Ana winds of more than 40 mph accelerated the fire's spread. Within minutes, the nearby Rancho Monserate Country Club, a 55+ community of 216 manufactured homes, was immediately threatened.



> "...my father's mobile home up on Dulin Road was completely destroyed...he got out with basically the clothes on his back and his vehicle." - Tom Sherman, Son of Fire Survivor

It was clear from the beginning the fire was a major incident. A unified incident command was quickly established with CAL FIRE, the Sheriff's Department, the North County Fire Protection District, the City of Vista, and the City of Oceanside.

Early in the fire, Sheriff's deputies and firefighters focused on evacuating and rescuing residents in immediate danger, as flames damaged and destroyed homes in Rancho Monserate and nearby areas of Bonsall and southern Fallbrook. First responders drove several terrified and stranded residents away from danger, as flames raged all around. Two trainers suffered serious burns at the San Luis Rey Downs horse training facility in Bonsall, where frantic staff tried to help the hundreds of animals there, and more than 45 horses died. San Diego County Fire Authority/ CAL FIRE responders helped provide Advanced Life Support-level care to injured individuals at the training facility. There, and in Rancho Monserate and other communities overrun by the Lilac Fire, first responders' actions saved lives.

The County Office of Emergency Services elevated the Operational Area Emergency Operations Center to a fully staffed activation in response to the emergency. Within the first hours of the fire's start, the County initiated the region's first-ever use of the federal Wireless Emergency Alert system, transmitted to all enabled cell phones in the region to warn residents of the dangerous fire. The message is believed to have been received by over two million cell users in the county, and people seeking information from 2-1-1 initially overwhelmed the call center. However, the message's referral to the information line and local media preserved 9-1-1 for true emergency callers in the fire zone.

0
HUMAN LIVES LOST

1ST
USE OF THE WIRELESS EMERGENCY ALERT SYSTEM

More than 1,500 homes were threatened by the Lilac Fire, including homes on large rural properties along the San Luis Rey River corridor, and developments adjacent to open areas of vegetation in more densely populated communities, including the cities of Vista and Oceanside.

The availability of local air and ground resources and the collaborative response allowed incident commanders to launch an effective response. Eleven fixed wing aircraft and 22 helicopters flew during the fire. On Dec. 7, in the initial phases of the fire, 11 helicopters and 8 fixed wing aircraft flew, including two San Diego Fire Rescue helicopters that provide a regional night flying capability. The fight from the air allowed firefighters and crews on the ground to do their jobs saving lives, protecting property, and containing the fire.

More than 77,000 people were affected and more than 1,300 evacuees were served at Red Cross and City of Carlsbad shelters.

The Sheriff's Department and City of Oceanside issued evacuation notices via the County's mass notification system, AlertSanDiego. More than 77,000 people were affected. Evacuation orders remained in effect until the early evening of Sunday, Dec. 10. Throughout the course of the fire, the American Red Cross sheltered evacuees in El Cajon, Escondido, Oceanside and San Marcos, and the City of Carlsbad opened a shelter. More than 1,300 evacuees were served.

The Del Mar Fairgrounds opened as a large animal shelter, and more than 850 horses were cared for there. The Department of Animal Services responded to more than 170 public calls and evacuated 34 animals. The department and its volunteer partners also fed and cared for 263 animals that remained in the evacuation zone.

County communications and emergency staff kept the public informed through the SD Emergency App, the SDCountyEmergenecy.com website, social media, and local media. The County's Spanish Translation Team provided updates in Spanish. The Partner Relay Network linked to community partners to coordinate the translation and dissemination of information in eight additional languages.

The fire was halted at 4,100 acres overnight Dec. 7 into Dec. 8, when a lull in the winds allowed incident commanders to head off the fire before it spread into populated areas of Oceanside. In the following days, firefighters worked on hot spots and containment. Throughout the fire, additional local, state and out-of-state resources joined local resources on the fight. The fire was contained on Wednesday, Dec. 13.

Photo: Jeff Hall Photography, CAL FIRE

Recovery

County, CAL FIRE and North County Fire Protection District Damage Assessment teams worked Dec. 8-10 to tally the damage. Their work helped the County identify and reach out to affected residents. The quick and accurate damage assessment was also a key step in bringing state and federal assistance to the region. Residents under evacuation orders were allowed to return the evening of Sunday, Dec. 10. On Monday, Dec. 11, the County opened a Local Assistance Center (LAC) at the Vista Library to assist fire survivors with immediate needs and information about the recovery process.

The road to recovery and rebuilding is long for fire survivors, and the County Recovery Plan addresses both immediate needs and ongoing assistance. Shortly after the fire, the County Department of Environmental Health helped residents remove 14,500 pounds of hazardous waste. The County's Recovery Team coordinated a "bin program," providing industrial sized trash bins in convenient locations to assist residents with debris removal. The County coordinated between property owners and Voluntary Organizations Active in Disaster (VOAD) for assistance with debris removal on private property.

The San Diego Foundation collected over $395,000 in support of Lilac Fire Recovery from businesses and generous community members. Some of the funding will support VOAD to hire case managers who will work directly with fire survivors with ongoing needs. The County's Planning & Development Services staff dedicated liaisons as a specific point of contact for each person whose home was destroyed or damaged. The estimated cost to County government of responding to, fighting and recovering from the Lilac Fire is $5 million, with additional costs incurred by cities and state agencies. Reimbursement from the state and federal government will help offset most local costs.

Ultimately, the regional response to the Lilac Fire was effective and well-resourced, with damage limited after an initial wind-driven fire burned out of control. The regional preparation and collaboration seen on the Lilac Fire demonstrated the ability of first responders, public agencies, volunteer groups and communities to respond quickly and effectively during a time of crisis.

In the first hours of the fire, a CAL FIRE/San Diego County Fire battalion chief received an urgent message: an elderly woman was trapped in a house that was beginning to catch fire. The battalion chief, a CAL FIRE/ San Diego County Fire engine company, and a San Diego County Sheriff's deputy raced to the address. Once there, a locked iron gate stood in their way. The engine crew worked together to remove the large gate from its racks. A narrow driveway flanked by flame was the only access to the house, but the engine driver thought they could make it. The crew reached the house, where they found a 90-year-old woman on the verge of collapse in her driveway. Smoke and fire were everywhere, whipped by 40 mph winds. The engine crew rescued the woman and drove her to a safe place. There, the deputy helped the woman into the patrol car and drove her out of the fire zone.

"The actions of the battalion chief, the engine company and the sheriff's deputy undoubtedly saved the life of this woman, while being faced with the imminent possibility of being overrun by fire themselves," said CAL FIRE Division Chief Nick Schuler, Lilac Fire incident commander.

FIXED WING AIRCRAFT
used throughout the fire

HELICOPTERS
used throughout the fire

Sequence of Events

DECEMBER 7 | DECEMBER 8 | DECEMBER 9 | DECEMBER 10

THURSDAY, DECEMBER 7

Vegetation fire reported (later named Lilac Fire)

CAL FIRE confirms there is an active vegetation fire on I-15 at Hwy 76.

Evacuations initiated for the nearby Rancho Monserate community

Fire jumps Old Highway 395

CAL FIRE reports that the Lilac Fire is now 100-150 acres with 0% containment

CAL FIRE update that fire is at 500 acres with rapid rate of spread westerly; 5 structures destroyed; damage unknown; 1,000 structures threatened; Military activated

CAL FIRE incident update: 1,000 acres burned. Mandatory Evacuations in the area of W. Lilac Rd. & Sullivan Middle School. Evacuation Warnings in effect North of Pala Rd, South of Reche Rd., West of I-15 Freeway East of Green Canyon Rd. & W. Mission Rd. Two Temporary Evacuation shelters have been set up: Fallbrook High School and Pala Casino. Road Closures: Old Hwy 395 between W. Lilac Rd. & Hwy 76 in both directions. Conditions: The fire is growing at a dangerous rate of spread with structures threatened. Five structures have been destroyed & an unknown amount has been damaged.

Current Acreage of Lilac fire is at 2,000 acres

County hosted a press conference on the Lilac Fire at the County's Emergency Operations Center.

The Lilac Fire has burned about 2,500 acres and is 0% contained. Unfortunately, two people have been injured and 20 structures burned.

FRIDAY, DECEMBER 8

CAL FIRE Incident Update: 4,100 acres burned; Containment at 15%; Current Situation: Due to favorable weather conditions, firefighters were able to make progress with containment lines. Damage assessment teams have began their inspections (as inspections are completed, damaged and destroyed numbers are likely to change).

SATURDAY, DECEMBER 9

CAL FIRE Incident Update: 4,100 acres burned; Containment at 20%; Current Situation: Throughout the night, firefighters were able to increase containment lines. Shifting winds are predicted in the afternoon; Santa Ana winds and low relative humidity are forecasted in the evening. Damage assessment teams continue inspections.

CAL FIRE Incident Update: 4,100 acres burned; Containment at 50%; Current Situation: Firefighters continue to improve and increase containment lines. Weather has been favorable for firefighters. Firefighters continue strengthening containment lines in preparation for challenging wind conditions in the evening. Damage assessment teams continue inspections.

SUNDAY, DECEMBER 10

CAL FIRE Incident Update: 4,100 acres burned; Containment at 60%; Current Situation: Firefighters continue to improve and increase containment lines. Weather has been favorable for firefighters. Overnight Santa Ana winds were in the vicinity of fire, but the strongest winds did not surface near the fire. Damage assessment teams continue inspections.

CAL FIRE Incident Update: 4,100 acres burned; Containment at 75%; Current Situation: Residents may return to their homes. Firefighters continue to harden and increase containment lines. No remaining road closures. Firefighters will continue to patrol the fire area for any hot spots throughout the evening. Damage assessment teams continue inspections.

Sequence of Events

Events are according to Pacific Daylight Time (PDT) and may reflect the actual time of the event or the time an event was reported.

SUNDAY, DECEMBER 3, 2017

1700 The San Diego National Weather Service has issued a Red Flag Warning from 3 a.m. Monday, December 4 to 12 a.m. Friday, December 8. The Red Flag Warning has been issued due to strong gusty winds and low humidity from the mountains to the coast. Winds will be 20-35 mph with gusts to 55 mph. Isolated gusts to 65 mph are possible.

TUESDAY, DECEMBER 5, 2017

1420 The San Diego National Weather Service has extended the Red Flag Warning to 6 p.m. Saturday, December 9. The Red Flag Warning has been issued due to strong gusty winds and low humidity from the mountains to the coast. Winds will be 25-35 mph with gusts to 55 mph. Isolated gusts to 70-90 mph are possible.

WEDNESDAY, DECEMBER 6, 2017

0500 The Operational Area Emergency Operations Center (OA EOC) is activated with County of San Diego Office of Emergency Services (OES) staff at a Level 1.

1355 Extreme fire weather conditions are expected to peak tonight through Thursday and will continue into the weekend. The San Diego National Weather Service has extended the Red Flag Warning to 8 p.m. Saturday, December 9. The Red Flag Warning has been issued due to strong gusty winds and low humidity from the mountains to the coast. Winds will be 25-35 mph with gusts to 60 mph. Isolated gusts to 90 mph are possible.

2025 The State of California Office of Emergency Services issues the following Wireless Emergency Alert (WEA): Strong winds overnight creating extreme fire danger. Stay alert. Listen to authorities.

THURSDAY, DECEMBER 7, 2017

0910 The American Red Cross opens (2) shelters for families affected by San Diego Gas & Electric's de-energization of power circuits: East Valley Community Center in Escondido and Bostonia Park Center in El Cajon.

1115 Vegetation fire reported (later named Lilac Fire).

1142 CAL FIRE confirms there is an active vegetation fire on I-15 at Hwy 76. Evacuations initiated for the nearby Rancho Monserate Country Club community.

1143 Mandatory evacuations in the area of W. Lilac Rd. and Sullivan Elementary.

1213 OA EOC activates to a Level 2 in response to the Lilac Fire.

1241 Mandatory evacuations from W. Lilac to Camino Del Rey; Fallbrook High School and East Valley Community Center available as shelters.

1242 Department of Animal Services moves trucks and trailers to support large/small animal evacuations in the area of the Lilac Fire outbreak and Bonsall community; Humane Society is responding as well.

1243 Evacuation of Bonsall Elementary School.

1248 Fire jumps Old Highway 395.

1308 CAL FIRE reports that the Lilac Fire is now 100-150 acres with 0% containment.

1326 Local Emergency Proclaimed.

1337 Del Mar Fairgrounds opens to receive large animals.

1345 Approximately 100-200 horses remain at Del Mar Fairgrounds. An additional 400 horses from San Luis Rey will be staying at Del Mar until May, per agreement between Del Mar and San Luis Rey Downs.

1352 OA EOC activated to a Level 3.

1352 San Diego County Sheriff Campaign 1: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to Fallbrook High School, Pala Casino, or East Valley Community Center in Escondido. AlertSanDiego Contacts: 3,748; Nighttime Population: 8,311; Daytime Population: 6,984; Housing Units: 3,299; Businesses: 261.

1357 San Diego specific WEA sent out: Dangerous fires in North SD County. Tune to local media. Call 211 for evac areas -SD OES.

Sequence of Events

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THURSDAY, DECEMBER 7, 2017

1401 The County Department of Public Works reports the following road closures in Fallbrook: Camino Del Rey from Hwy 76 to Old Hwy 395; Old Hwy 395 from Hwy 76 to West Lilac Road; West Lilac Road from Old Hwy 395 to Camino Del Rey; Hwy 76 closed at Gird; Hwy 76 closed at E. Vista Way.

1401 CAL FIRE update that fire is at 500 acres with a critical rate of spread westerly; 5 structures destroyed; damage unknown; 1,000 structures threatened; Military activated.

1404 San Diego County Sheriff Campaign 2: San Diego County Sheriff issues Evacuation Warning via Voice Message, SMS Text, and Email, advising contacted individuals to monitor local media for updates and prepare to take action if called upon to do so. AlertSanDiego Contacts: 4,604; Nighttime Population: 11,286; Daytime Population: 8,176; Housing Units: 4,640; Businesses: 227.

1427 San Diego County Sheriff Campaign 3: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to East Valley Community Center in Escondido or Pala Casino. AlertSanDiego Contacts: 4,604; Nighttime Population: 11,286; Daytime Population: 8,176; Housing Units: 4,640; Businesses: 227.

1435 CAL FIRE incident update: 1,000 acres burned. Mandatory Evacuations in the area of W. Lilac Rd. & Sullivan Middle School. Evacuation Warnings in effect North of Pala Rd, South of Reche Rd., West of I-15 Freeway East of Green Canyon Rd. & W. Mission Rd. Two Temporary Evacuation shelters have been set up: Fallbrook High School and Pala Casino. Road Closures: Old Hwy 395 between W. Lilac Rd. & Hwy 76 in both directions. Conditions: The fire is growing at a dangerous rate of spread with structures threatened. Five structures have been destroyed & an unknown amount has been damaged.

1512 San Diego County Sheriff Campaign 4: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to East Valley Community Center in Escondido. AlertSanDiego Contacts: 716; Nighttime Population: 1,815; Daytime Population: 1,156; Housing Units: 592; Businesses: 44.

1524 Highway 76 closed in both directions between E. Vista Way and Old Highway 395.

1537 Current Acreage of Lilac fire is at 2,000 acres.

1547 San Diego County Sheriff Campaign 5: San Diego County Sheriff issues Evacuation Warning via Voice Message, SMS Text, and Email, advising contacted individuals to be prepared to evacuate if an evacuation order is issued. AlertSanDiego Contacts: 11,631; Nighttime Population: 35,848; Daytime Population: 22,842 Housing Units: 11,382; Businesses: 387.

1630 County hosts a press conference on the Lilac Fire at the County's Emergency Operations Center.

1732 San Diego County Sheriff Campaign 6: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to East Valley Community Center in Escondido. AlertSanDiego Contacts: 3,529; Nighttime Population: 8,859; Daytime Population: 7,440; Housing Units: 3,190; Businesses: 270.

1749 Oceanside Police Department Campaign 1: Oceanside Police Department issues mandatory evacuation for everything east of Wilshire and North of N. River Rd. Advisement that N. River Rd. is closed for east bound traffic, but west bound is still open. Officers will be going door to door for evacuations.

1808 Governor proclaims a State of Emergency in San Diego County due to the Lilac Fire.

1811 The Lilac Fire has burned about 2,500 acres and is 0 percent contained. Unfortunately, two people have been injured and 20 structures burned.

1825 San Diego County Sheriff Campaign 7: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate north toward E. Mission then east toward I-15; residents can evacuate to East Valley Community Center in Escondido. AlertSanDiego Contacts: 3,513; Nighttime Population: 9,156; Daytime Population: 6,552; Housing Units: 3,762; Businesses: 166.

1905 The County Department of Public Works reports the following road closures in Fallbrook: Gopher Canyon Road from East Vista Way to Little Gopher Canyon Road; Old River Road at Little Gopher Canyon Road through Golf Club Drive; Camino Del Rey at Hwy 76 to Old Hwy 395; Old Hwy 395 from Hwy 76 to West Lilac Road; West Lilac Road from Old Hwy 395 to Camino Del Rey; Hwy 76 from Old Hwy 395 to Via Monserate; South Mission Road is closed at Winterhaven Road to southbound traffic to Hwy 76.

Sequence of Events

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THURSDAY, DECEMBER 7, 2017

1925 San Diego County Sheriff Campaign 8: San Diego County Sheriff issues Evacuation Warning via Voice Message, SMS Text, and Email, advising contacted individuals to be prepared to evacuate if an evacuation order is issued. AlertSanDiego Contacts: 6,518; Nighttime Population: 16,894; Daytime Population: 15,534; Housing Units: 5,740; Businesses: 456.

1937 San Diego County Sheriff Campaign 9: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to East Valley Community Center in Escondido. AlertSanDiego Contacts: 6,518; Nighttime Population: 16,894; Daytime Population: 15,534; Housing Units: 5,740; Businesses: 456.

1949 San Diego County Sheriff Campaign 10: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to East Valley Community Center in Escondido. AlertSanDiego Contacts: 3,574; Nighttime Population: 11,843; Daytime Population: 7,895; Housing Units: 3,266; Businesses: 75.

1958 Oceanside Police Department Campaign 2: Oceanside Police Department issues mandatory evacuation for the area east of Douglas to city limits and north of N. River Rd. Evacuation shelter open at Oceanside High School.

2018 San Diego County Sheriff Campaign 11: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate; residents can evacuate to Carlsbad Forum Shops. AlertSanDiego Contacts: 7,259; Nighttime Population: 22,665; Daytime Population: 14,979; Housing Units: 7,049; Businesses: 237.

2019 Oceanside Police Department Campaign 3: Oceanside Police Department issues mandatory evacuation for everything north of N. River Rd, east of Douglas to College, everything east of College to 76th, everything south of 76th from North Santa Fe to the city limits. AlertSanDiego Contacts: 9,022; Nighttime Population: 32,688; Daytime Population: 21,458; Housing Units: 9,645; Businesses: 252.

2030 San Diego County Sheriff Campaign 12: San Diego County Sheriff issues Evacuation Warning via Voice Message, SMS Text, and Email, advising contacted individuals to be prepared to evacuate if an evacuation order is issued. AlertSanDiego Contacts: 23,280; Nighttime Population: 65,454; Daytime Population: 49,972; Housing Units: 22,186; Businesses: 1,435.

2051 The City of Oceanside has a shelter open at Oceanside High School and the City of Carlsbad has a shelter open at the Stagecoach Community Center. Both shelters are pet-friendly.

2103 San Diego County Sheriff Campaign 13: San Diego County Sheriff issues Evacuation Order via Voice Message, SMS Text, and Email, ordering contacted individuals to evacuate westbound on Ammunition through Camp Pendleton; residents can evacuate to Carlsbad Forum Shops. AlertSanDiego Contacts: 7,109; Nighttime Population: 18,375; Daytime Population: 16,712; Housing Units: 6,334; Businesses: 494.

2158 CAL FIRE and the City of Oceanside expand the mandatory evacuation areas to include: North of Bobier Drive, east of Melrose Drive, north of North Santa Fe Avenue, and east of College Boulevard; South of North River Road, north of Bobier Drive, east of Melrose Drive and North Santa Fe Avenue, and west of East Vista Way; Areas east of Douglas Drive and north of North River Road; West of Wilshire Road, north of North River Road, east of Douglas Drive, and south of Camp Pendleton fence line; and, west of North Santa Fe Avenue and Melrose Drive, north of Oceanside Boulevard, east of Old Grove Road and Douglas Drive, and south of North River Road.

2217 San Diego County Sheriff Campaign 14: San Diego County Sheriff issues an updated evacuation message advising that the Carlsbad Forum Shops are no longer an evacuation point; residents may evacuate to Stagecoach Community Park in Carlsbad.

2225 County of San Diego Health and Human Services Agency (HHSA) advises of the following closures on Friday, December 8: North Coastal Family Resource Center, Aging and Independence Services, and Child Welfare Services in Oceanside; North Coastal Public Health Center in Oceanside; and Fallbrook Community Resource Center.

2346 Stagecoach Community Center shelter is full. Evacuees are redirected to East Valley Community Center in Escondido.

Sequence of Events

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FRIDAY, DECEMBER 8, 2017

0203 The American Red Cross has opened a shelter at Palomar College in San Marcos. The facility is pet-friendly.

0617 Oceanside High School shelter is full. Evacuees are redirected to Palomar College in San Marcos.

1045 The Federal Government declared an emergency this morning in response to the wildfires that have devastated Southern California this week. The declaration covers San Diego, Los Angeles, Riverside, Santa Barbara and Ventura counties, over a time period starting December 4.

1105 The County of San Diego announces that it will be opening a Local Assistance Center (LAC) on Monday, December 11, to help residents begin the rebuilding and recovery process. The center will be located at the county's Vista branch library. The LAC will be open from 9:00 a.m. to 6:00 p.m.

1230 San Diego County District Attorney issues a warning to businesses and scammers to not take advantage of consumers by price gouging during a state of emergency - doing so can end in prosecution.

1700 CAL FIRE announces that an evacuation order covering parts of Vista, Fallbrook and Oceanside has been downgraded to an evacuation warning, meaning that residents may return home to the following areas: West of Wilshire Rd. to North River Road; South of North River Road from Wilshire to Holly Lane; South of Holly Lane from North River Road to Mission Rd.; South of Little Gopher Canyon Road to Sagewood Road; South of Dentro De Lomas at Nors Ranch Road; Via Maria Elena South of Camino Del Rey; Camino Del Rey South of Bobritt Lane; Aquaduct Road South of Via Ulner Way; North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road; South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos; Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road; Knottwood Way north of Flowerwood Lane; Gird Road north of Mary Lewis Drive; Sage Road north of Brodea Lane.

1900 CAL FIRE Incident Update: 4,100 acres burned; Containment at 15%; Current Situation: Due to favorable weather conditions, firefighters were able to make progress with containment lines. Damage assessment teams have begun their inspections (as inspections are completed, damaged and destroyed numbers are likely to change.)

SATURDAY, DECEMBER 9, 2017

0700 CAL FIRE Incident Update: 4,100 acres burned; Containment at 20%; Current Situation: Throughout the night, firefighters were able to increase containment lines. Shifting winds are predicted in the afternoon; Santa Ana winds and low relative humidity are forecasted in the evening. Damage assessment teams continue inspections.

1055 The Carlsbad shelter has closed; about 180 people remain at the following shelters, which remain open: Palomar College in San Marcos; East Valley Community Center in Escondido; and Bostonia Park and Recreation in El Cajon.

1055 Roads within the mandatory evacuation area remain closed, including Highway 76 from Old Highway 395 and Via Monserate.

1310 The East Valley Community Center shelter in Escondido has closed; about 110 people remain at the following shelters: Palomar College in San Marcos and Bostonia Park and Recreation in El Cajon.

1900 CAL FIRE Incident Update: 4,100 acres burned; Containment at 50%; Current Situation: Firefighters continue to improve and increase containment lines. Weather has been favorable for firefighters. Firefighters continue strengthening containment lines in preparation for challenging wind conditions in the evening. Damage assessment teams continue inspections.

1900 CAL FIRE Incident Management Team 1 in cooperation with the Unified Commanders on the Lilac Fire host a community meeting at the Fallbrook Community Center.

SUNDAY, DECEMBER 10, 2017

0700 CAL FIRE Incident Update: 4,100 acres burned; Containment at 60%; Current Situation: Firefighters continue to improve and increase containment lines. Weather has been favorable for firefighters. Overnight Santa Ana winds were in the vicinity of fire, but the strongest winds did not surface near the fire. Damage assessment teams continue inspections.

Sequence of Events

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SUNDAY, DECEMBER 10, 2017

1430 Evacuation orders lifted. The two following areas remain closed to everyone except residents with identification: Rancho Monserate Country Club and the area between 5200 Olive Hill Rd. and 5800 Olive Hill Rd.

1900 CAL FIRE Incident Update: 4,100 acres burned; Containment at 75%; Current Situation: Residents may return to their homes. Firefighters continue to harden and increase containment lines. No remaining road closures. Firefighters will continue to patrol the fire's area for any hot spots throughout the evening. Damage assessment teams continue inspections.

1949 County OES deactivating the EOC and returning to Duty Officer Status.

MONDAY, DECEMBER 11, 2017

0700 CAL FIRE Incident Update: 4,100 acres burned; Containment at 80%

0900 The Local Assistance Center (LAC) opens at the county's Vista branch library, providing the following services: case management, crisis counseling and referral services, assistance with tax relief information and records replacement, short term housing referrals, CalFresh/SNAP resources and information, and a mobile medical clinic.

1700 The shelter at the Bostonia Park & Recreation Center closes. The shelter at Palomar College in San Marcos remains open.

1900 CAL FIRE Incident Update: 4,100 acres burned; Containment at 90%; Current Situation: Damage assessment teams have completed inspections.

TUESDAY, DECEMBER 12, 2017

0700 CAL FIRE Incident Update: 4,100 acres burned; Containment at 92%.

0949 Approximately 100-200 horses remain at Del Mar Fairgrounds. An additional 400 horses from San Luis Rey will be staying at Del Mar until May, per agreement between Del Mar and San Luis Rey Downs.

1900 CAL FIRE Incident Update: 4,100 acres burned; Containment at 95%.

WEDNESDAY, DECEMBER 13, 2017

0700 CAL FIRE Incident Update: 4,100 acres burned; Containment at 95%; Current Situation: CAL FIRE Incident Management Team 1 transitioned to the local unit.

1900 CAL FIRE Incident Update (Final): 4,100 acres burned; Containment at 96%; Current Situation: Incident has transitioned to local unit.

1900 The shelter at Palomar College in San Marcos closes.

Firefighting Overview

Lilac Fire Attack and Containment

The Lilac Fire east of Bonsall was reported at 11:15 a.m. on Dec. 7. It started just west of Interstate 15 and south of Highway 76, and the fire's cause is under investigation. Steady, strong Santa Ana winds with gusts of more than 40 mph were reported at the time, accelerating the fire's spread. Within minutes, the nearby Rancho Monserate Country Club, a 55+ community, was in immediate danger, with flames bearing down on the neighborhood of 216 homes.

Within hours, the wind-driven fire destroyed 114 properties and grew to 4,100 acres

North County Fire Protection District and CAL FIRE were dispatched to the fire. Multiple CAL FIRE aircraft were dispatched from the Ramona Air Attack Base, and they were above the fire area at 11:30 a.m. Additionally, CAL FIRE and other responders had a ready view of the flames and billowing smoke from the region's network of mountaintop cameras. It was clear the fire would become a major incident. It was spreading quickly in the gusty winds and dry conditions; the extreme weather was expected to continue, possibly for days. The terrain in the fire's path was the combustible semi-rural San Luis Rey river rural corridor, leading through Bonsall, northern Vista, and on to Oceanside. Incident commanders called for an aggressive wildland response.

A Unified Command was quickly established with CAL FIRE, the Sheriff's Department, the North County Fire Protection District, the City of Vista, and the City of Oceanside. Early in the fire, Sheriff's deputies and firefighters focused on evacuating and rescuing residents in immediate danger, as flames damaged and destroyed dozens of homes in Rancho Monserate, and also affected nearby areas of Bonsall and southeastern Fallbrook.

Incident commanders estimated that some 1,500 homes were threatened, including homes on large rural properties along the San Luis Rey River corridor, and developments adjacent to open areas of vegetation in more densely populated communities. The fire effort focused on protecting lives and structures in the path of the fire, and keeping the fire from spreading into developed areas.

Within hours, the wind-driven fire destroyed 114 properties and grew to 4,100 acres. Successful and swift rescue and evacuation efforts prevented any loss of human life. However, two trainers suffered serious burns at the San Luis Rey Downs training facility in Bonsall as they scrambled amid the flames to try to save the hundreds of animals at the facility. First responders from Oceanside Fire Department and CAL FIRE/San Diego County Fire Authority treated them and transported them to safety. More than 45 horses perished.

Photo: Jeff Hall Photography, CAL FIRE

A turning point in the fire came overnight, Dec. 7 into Dec. 8, when the strong Santa Ana winds subsided. By this point, the 4,100 acre fire had jumped north of Highway 76 and was threatening Oceanside communities at its northwestern flank. With the lull in the winds, incident commanders strategically concentrated resources ahead of the fire to stop it. The stand was successful; Oceanside was protected.

San Diego County has numerous local resources available for responses to wildland fires, which played a major role in halting the Lilac Fire. Local resources give incident commanders tools to attack a fire in its early hours, alongside locally stationed state resources. San Diego County's Santa Ana wind driven fires have historically been the last incidents in a chain of weather-driven wildfires that move down the state. That means state resources are often already committed, and the San Diego region may not get assistance right away.

Photo: Jeff Hall Photography, CAL FIRE

Shortly after CAL FIRE/San Diego County Engine 37 got to the Lilac Fire, reports of multiple burn victims at the San Luis Rey Downs training center began to dominate radio traffic. Engine 37, with its paramedic level, Advanced Life Support (ALS), capability was requested. The crew drove through the fire front to reach the property. There, they found Oceanside firefighters caring for a burn patient, who was sitting in the passenger seat of a golf cart. Engine 37 and Oceanside firefighters treated the badly burned patient while they developed a plan to move the person by air to UCSD Regional Burn Center. Even as the firestorm rained down hot embers and debris, the firefighters provided Advanced Life Support care and prepared the patient for transport. The County upgraded Engine 37 from a Basic Life Support capability to ALS earlier in the year. It may have been the difference in saving the life of this patient.

Overall air assets on the fire included:

11 fixed wing CAL FIRE aircraft, including a CAL FIRE DC-10 that dropped 11,000 gallons of retardant

22 Helicopters, with local resources that included:

Type 1 Crane Helicopter (County contract)

Four military Helicopters, two Marine, two Navy

Three Sheriff's ASTREA Helicopters

Type 1 Crane Helicopter (SDG&E)

Two San Diego Fire Rescue Helicopters used for night flying

Firefighting Readiness

In the days before the fire, the County, CAL FIRE, and cooperating agencies prepared for an unprecedented winter wildfire risk. A Red Flag Warning had gone into effect early Monday, Dec. 4, and an updated forecast from the National Weather Service issued mid-day Tuesday, Dec. 5, warned of extreme risk for ignitions and rapid wildfire spread on Dec. 7. The region was experiencing its driest start to winter since 1929, and the forecast called for single digit humidity, and extreme Santa Ana winds with gusts up to 100 mph. In these conditions, the risk of vegetation igniting and spreading explosively was extremely high.

In response to the wildfire threat, actions to increase readiness in the days leading up to the fire included:

CAL FIRE and San Diego County Fire Authority stations and equipment were at peak staffing with days off cancelled

The County hired a private Type 1 Crane Helicopter, part of its "Call When Needed" program, which arrived in the region the morning of Dec. 7

By established agreements with the Navy and Marines, CAL FIRE secured four military helicopters prepared to respond to any incident

CAL FIRE activated a City of San Diego wildfire strike team of five engines and 22 personnel to be on standby at CAL FIRE's San Diego headquarters to respond to any regional incidents

San Diego Gas & Electric contracted for a crane helicopter, normally in the region during peak fire season, to return to the region

CAL FIRE prepositioned state and out-of-state resources in Riverside County to be available. These resources were activated for the Lilac Fire

Law Enforcement

San Diego County Sheriff's Department

The San Diego County Sheriff's Department provides law enforcement, detention and court services for San Diego County in a service area of approximately 4,200 square miles. In addition, the department provides specialized regional services to the entire county, including cities and the unincorporated areas. During disasters, the Sheriff's Department's responsibilities include evacuation, traffic control, and security for the restricted emergency area. The department also disseminates alert and warning information to the public, and assists in the firefight with ASTREA helicopters. In addition, the Sheriff's emergency 9-1-1 dispatch center is a critical service.

On December 7, AlertSanDiego notified more than 44,000 households in the fire area of advisory and mandatory evacuation orders.

In the first hours of the Lilac Fire on Dec. 7, deputies, detectives, sergeants and lieutenants from surrounding Sheriff's stations responded swiftly to the incident command post. The Sheriff's Department was integrated into the incident command structure with fire commanders. Sheriff's personnel conducted door to door evacuations, road closures and looting prevention and responded to emergency calls. Along with firefighters, Sheriff's deputies were part of the first response force that helped people in the Rancho Monserate community and other areas escape amid flames and swirling embers. Later in the incident, the Sheriff's Department escorted a small number of residents into the closed area to retrieve essential medications.

The Sheriff's Department deployed a platoon of 50 deputies, including four sergeants and a lieutenant, 24 hours a day for the first several days of the incident. Sheriff's deputies prepare for wildfires with mandatory annual training, which includes fire behavior, evacuations, and emergency operations.

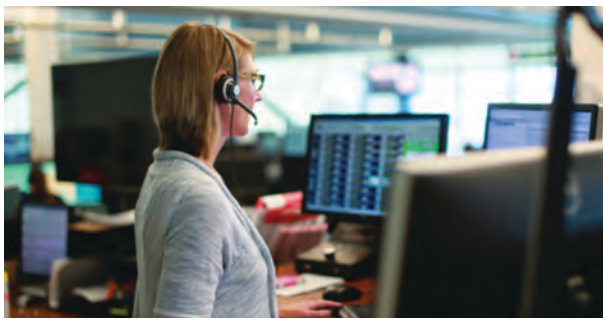
At the fire's onset, the department quickly staffed its Departmental Operations Center in Kearny Mesa to manage and coordinate the law enforcement component of the disaster response, with approximately 20 sworn and non-sworn staff.

ASTREA

The Sheriff's Aerial Support to Regional Enforcement Agencies (ASTREA) was deployed to the fire in its initial phase to help determine the fire's size and the wind conditions, and this unit remained on the fire to update responders about the fire's movement. Two additional ASTREA firefighting helicopters carrying CAL FIRE personnel made water drops throughout the fire.

9-1-1 Response

In the first nine hours on Dec. 7, calls to the Sheriff's Communications Center nearly doubled compared to an average day. The Communications Center was fully staffed with trained dispatchers, who answered calls with minimal delay. During these peak early hours of the fire, 88 percent of calls were answered within 15 seconds, and no caller waited more than 2 minutes. The total number of 9-1-1 calls on Dec. 7 was 1,591, compared to 820 on average in the days leading up to the fire – when 96 percent of calls were answered within 15 seconds. Likewise on Dec. 7, dispatchers answered a large increase in nonemergency calls to nonemergency number with minimal delays, with 2,473 compared to 1,226 on an average day.



The effective Communications Center response can be attributed in part to increased hiring and training efforts that began earlier in the year, when the County increased permanent staffing in the communications center. 9-1-1 call centers across the nation have dealt with the challenge of answering calls quickly, given dramatic increases in call volume due to multiple mobile phone callers for any given incident. The County's addition of 30 emergency dispatcher positions for the Communications Center in 2017 represented a significant ongoing investment to achieve a short time for answering 9-1-1 calls and meet national standards. The staffing levels and trained dispatchers proved effective, even with the 96 percent above-average call volume the first day of the Lilac Fire.

San Diego County Probation

The Probation Department assigned 116 Probation officers and non-sworn staff, playing a significant role in security and public service at the incident command post and first responder staging areas. After a wildfire has apparently burned through an area, evacuees may try to come home right away to see if their house is OK or get something they couldn't take with them. However, even after visible flames are gone, burn zones may have hot spots, downed wires, or other dangers, and incident commanders reopen areas only when it's safe. The Probation Department helped the Sheriff's Department limit access to the fire area to emergency responders. Probation officers also helped the Sheriff's Department provide escorts for residents into the closed area. The Probation Department and Sheriff's deputies helped displaced residents with information and various other requests.

Probation officers also provided security for the Emergency Operations Center (EOC) and helped answer public inquires in the EOC. They also assisted the 2-1-1 emergency call center.

Non-County Law Enforcement

The California Highway Patrol and Oceanside Police also responded to the command post throughout the incident and assisted with evacuations, road closures and security.

Photo: Jeff Hall Photography, CAL FIRE

"One of our officers was listening to an elderly woman in tears because she feared her cats may have perished in the fire. Our officer connected her to an animal control officer who was able to go into the affected area and find her cats. It was a beautiful thing to see the relief on her face when they were returned to her." Shari Stegall, Senior Deputy Probation Officer

Operational Area Emergency Operations Center

The County's Operational Area Emergency Operations Center (EOC or OA EOC) is located in Kearny Mesa, within the County Office of Emergency Services (County OES). During emergencies, OES, other County departments and regional agencies work from the EOC to coordinate and manage various aspects of the event. Personnel working in the EOC include County officials, law enforcement, fire personnel, emergency medical coordinators, public works staff, shelter coordinators, utility representatives and others, with exact staffing patterns responsive to the unique emergency. "Operational Area" EOC, means that under the state's emergency structure, the County is the region's lead agency, and the County is responsible for coordinating emergency responses for major disasters or serious emergencies that affect more than one governmental jurisdiction. The County EOC may also activate for incidents entirely within the County's jurisdiction.

During the Lilac Fire, the cities of Carlsbad, Vista and Oceanside activated local emergency operations centers to manage fire-related issues in their own cities, and the Operational Area EOC coordinated with the city EOCs. Staff in the OA EOC put together information from partner agencies and other sources to develop the full picture of an evolving emergency. In this way, the OA EOC supports coordinated and informed actions by policymakers, County departments, regional agencies, and members of the public. The EOC also monitors the need for additional human, physical and financial resources in an emergency and works to secure those resources for first responders.

RECOMMENDATION:

To increase staff preparedness, training, and coordination, the Office of Emergency Services should work with County departments to create a list of specific individuals who may be assigned to a particular EOC position and identify and track training that would enhance these individual's readiness for a disaster.

The Emergency Operations Center can accommodate more than 120 people, and it was fully staffed in the Lilac Fire. The Joint Information Center, which is attached to the EOC, was also fully staffed with Public Information Officers who worked to keep social media, ReadySanDiego.org, the SD Emergency mobile application and media informed of current fire information.

EOC positions

Convening in one place with access to common information is critical for the fast moving pace of an emergency. While the positions that need to be staffed in an EOC vary based on the emergency, the staffing structure of the Operational Area EOC is based on the State Incident Management System/National Incident Management System staffing structure, with some local adaptations.

Many County and partner agency staff who have a role in the EOC or another part of the emergency have practice or experience through a previous disaster (2016 Border Fire, 2014 May Fires, 2007 firestorm, 2003 firestorm) or a drill. County OES conducts annual exercises involving County and regional partners to promote familiarity with technology, roles, and disaster protocols.

Existing Activation Levels	Conditions/ Definition
Level 3	• Catastrophic disaster, which requires comprehensive Operational Area (OA) response and/or assistance
Level 2	• Large-scale disaster, requiring high amount of OA involvement
Level 1	• Small to moderate disaster/ pre-planned event
Normal Operations/ Monitoring	• Duty officer status • Steady-state operations • OA maintains situational awareness

Pre-Fire Actions

A Red Flag warning took effect Monday, Dec. 4, and on Tuesday, Dec. 5, the National Weather Service warned of historically dangerous conditions for wildfire on Thursday, Dec. 7. In response, the County Office of Emergency Services (OES) began preparing for a potential major wildfire in the days before the Lilac Fire.

Several days before Dec. 7, OES staff drafted a staff roster for the EOC and tested essential EOC technology. OES also contacted and coordinated planning with the American Red Cross, 2-1-1, and County departments such as the Sheriff's Department, Animal Services and Human Resources, among others.

To bolster local firefighting resources, OES worked with CAL FIRE to contract and place on standby a Type 1 Crane Helicopter as part of the County's "Call When Needed" program.

The County EOC was activated with Level 1 (OES) staffing on Dec. 6 at 5 a.m. to monitor and quickly respond to any fire starts in the days ahead.

Lilac Fire Activation

At approximately 11:20 a.m. on Dec. 7, OES staff received the first reports of a vegetation fire from CAL FIRE dispatch and began closely monitoring developments and contacting fire and law enforcement liaisons for accurate information. The fire quickly resulted in evacuation orders for the e community of Rancho Monserate and homes nearby. County OES ramped up for a significant incident. At 12:13 p.m., the Operational Area EOC activated at a Level 2, and it elevated to a Level 3 at 1:52 p.m.

The OA EOC was staffed 24 hours Level 3 until Sunday, Dec. 9, when staffing was reduced to a Level 2, and then back to Level 1 later in the evening. The OA EOC was deactivated on Dec. 10. OES staff continued to monitor the incident, and County departments coordinated disaster recovery in a separate location.

Significant County EOC actions included:

The County CAO issued a Proclamation of Local Emergency on Dec. 7, 12:13 p.m. Local Emergency Proclamations afford legal immunities for emergency actions taken by public employees, the County, cities and special districts; facilitate requests by the County and other local governments for State and Federal assistance; and authorize preventative measures as necessary to protect and preserve public health and safety.

Activated a Wireless Emergency Alert to all of San Diego County.

Initiated AlertSanDiego campaigns on behalf of the Sheriff's Department and City of Oceanside.

Coordinated with the American Red Cross and cities to establish and operate shelters for evacuees.

Provided coordinated public information about evacuations, shelters, fire danger and damage, school closures, and recovery, including information in Spanish and eight other languages.

Coordinated with the Residential Care Facilities for the Elderly (RFCE) Task Force to monitor the evacuations and resident needs of 31 RFCEs and 35 Adult Residential Facilities potentially affected by the fire.

Emergency Operation's Center Innovation and Technology

Partner Relay

The Partner Relay System is a collaborative effort between OES and the Health and Human Services Agency (HHSA) to improve communication with Limited English Proficient communities before, during and after disasters. During the Lilac Fire, the Partner Relay team sent 46 messages from the EOC to a network of community partners who had been previously engaged and trained to be partners in translating and disseminating information to their community members. The system allowed the OA EOC to communicate about the fire with nonprofit organizations, refugee resettlement organizations, houses of worship, and community leaders serving Limited English Proficient residents. The network reaches Arabic, Chinese, Karen, Korean, Spanish, Somali, Tagalog and Vietnamese speakers; it also notifies homeless service providers.

WebEOC

WebEOC is a web-enabled crisis information management system that provides disaster response personnel with a regional common operating picture. It is used in the OA EOC and the 18 cities and allows for real-time information sharing throughout the region. Individuals with Web EOC access can view and share status boards, map files, status reports, and various other information from any internet-capable device. WebEOC has over 6,000 regional users.

HP WREN and SCOUT

Agencies were monitoring images from a network of mountaintop cameras when the Lilac Fire started. A real-time view of the growing blaze helped decision-makers quickly understand the magnitude and danger of the incident and helped aid decisions to initiate evacuations, a Wireless Emergency Alert and an emergency proclamation.

The cameras are part of the High Performance Wireless Research and Education Network (HPWREN) operated

and maintained by University of California, San Diego's (UCSD) Scripps Institution of Oceanography, and supported by the County of San Diego, CAL FIRE, the U.S. Forest Service, San Diego Gas & Electric and San Diego State University. The HPWREN network uses microwave for backcountry internet connectivity, which provides the camera link. The network also supports the ASAPnet, which connects backcountry fire stations to the internet, including San Diego County Fire Authority stations.

The network also enables an internet connection to tools such as SCOUT, the Situational Awareness and Collaboration Tool. With SCOUT, the use of Automatic Vehicle Locators and other features allow fire personnel to see a real time picture of the firefight, including the perimeter and location of resources. The SCOUT view was displayed on monitors in the OA EOC.

GIS maps

County Land Use and Environment and OES staff in the EOC created a variety of incident maps to help the public, policymakers and first responders understand the emergency. Map elements included fire perimeter, evacuation zones and critical infrastructure.

RECOMMENDATION:

It is recommended that Health and Human Services GIS staff join the EOC team in future incidents to assist in the quick analysis of health-related services, such as hospitals and Skilled Nursing Facilities, within the disaster zone.

Public Alerts and Public Information

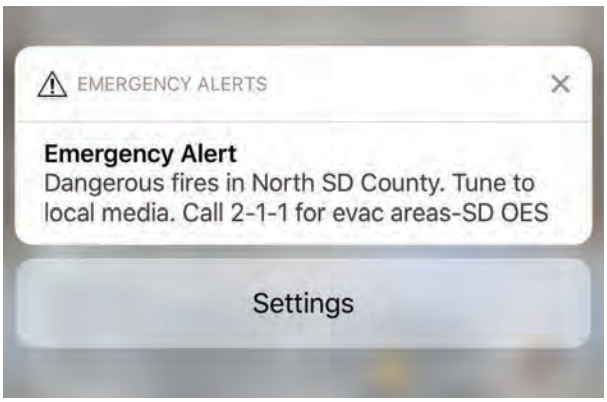
Wireless Emergency Alert

The Lilac Fire marked the first time the County issued a Wireless Emergency Alert, or WEA, which is a federal public alert and warning system governed by the Federal Communications Commission and FEMA. When a government agency sends a WEA, enabled mobile devices sound a distinctive tone and display a short message. The system uses cell towers to transmit the alert to a selected area. Since most people carry mobile phones, a WEA can alert a majority of the residents and visitors in a given area.

On Dec. 6, the night before the Lilac Fire started, the California Office of Emergency Services issued its own unprecedented WEA. The agency made the decision to alert the entire Southern California region of the extremely dangerous wildfire conditions.

On Dec. 7 at 1:57 p.m., with the Lilac Fire spreading quickly, the County issued a WEA to all of San Diego County. At that point, fire personnel reported the fire at about 500 acres, with rapid westerly spread. Door to door evacuations were under way, and evacuation advisories had been initiated through the AlertSanDiego mass calling system. The decision to issue the WEA to the entire region was based on the fire's potential rapid spread into populated areas, including the cities of Vista and Oceanside. The WEA immediately reached as many people as possible who might be affected, whether they were potential evacuees in the fire's path or North County residents working in other parts of the county.

The message stated:



Over two million cell users are estimated to have received the message. Some turned to broadcast or internet media, and callers flooded 2-1-1. For a period of about 40 minutes, an unknown number of 2-1-1 calls failed to connect due to unprecedented call volume. However, the message itself had the intended effect. Instead of calling 9-1-1 and responding as if they were in immediate danger, people sought information about the fire. The message helped preserve 9-1-1 dispatchers' ability to answer the many true emergency calls coming in at the time from people in the fire area.

WEAs arrive with a jarring tone, can be no more than 90 characters, and contain no hyperlinks or graphics. WEA is managed by FEMA, the Federal Communications Commission, and the major wireless companies. Under federal law, the system can be used for presidential alerts, Amber Alerts, and alerts involving threats to life and safety. Government agencies such as the County have access to the system for emergency alerts, which are issued by cooperating cell companies to customers in the message's targeted area.

RECOMMENDATION:

It is recommended the County continue to activate the WEA system only when it's the most appropriate tool, generally in cases when emergency officials want to quickly alert as many people as possible in a given area. The County should also continue to rely on a range of alert and public information options, such as AlertSanDiego, to communicate emergency information to the public. Likewise, the County should continue to advocate for the federal lawmakers and agencies overseeing the WEA system to make improvements, such as hyperlinks, maps or additional text characters for clearer and more informative alerts.

AlertSanDiego

AlertSanDiego is the region's emergency mass notification system; it includes listed and unlisted landline telephones and registered cell phone and email addresses. As the Lilac Fire grew Dec.7, the San Diego Sheriff's Department and the City of Oceanside issued evacuation warnings and orders through AlertSanDiego, the first initiated by the Sheriff's Department at 1:52 p.m. and the last by Oceanside at 9:19 p.m., in 17 separate notification campaigns. The messages are estimated to have reached over 44,000 households and 2,600 businesses.

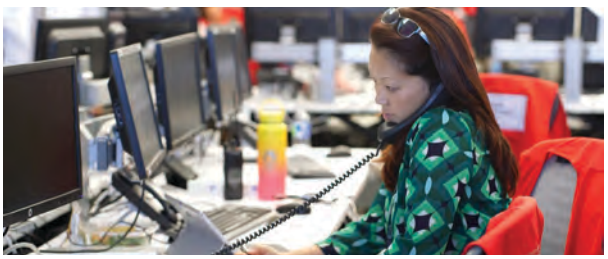
Since 2007, when AlertSanDiego was launched, more than 524,000 residents have registered their mobile phones or email addresses to receive emergency messages.

Public Information

In the months and weeks leading up to the Lilac Fire, news of the devastating Northern and Central California fires were on the minds of San Diegans. Using County News Center, Facebook and Twitter, the County Communications Office drew on these events to educate residents and the media about wildfire prevention. During that time, County fire preparedness posts had 119,682 views across all platforms and 1,563 social media interactions (likes, shares, retweets, etc.).

In the days just before the Lilac Fire with the extreme weather at hand, County communications staff worked with CAL FIRE and other regional partners to establish communication plans and send public messages about the risk of fire and the need to prepare.

The County used its "SD Emergency" mobile app to send warning alerts two days prior to the Lilac Fire. The preparedness messages also appeared on the County's emergency website, www.sdcountyemergency.com, County News Center, and social media.



Joint Information Center

The Joint Information Center, a room within the Emergency Operations Center staffed with Public Information Officers, was fully staffed at the same time the Emergency Operations Center activated on Dec. 7. County communications staff worked with the emergency operations staff and in coordination with external agencies, including contacting more than 300 regional public information officers by email, to ensure the development and dissemination of essential information throughout the Lilac Fire.

Joint information Center activity from Dec. 7 through Dec. 11 included:

- Two news conferences on the afternoon of Dec. 7 and morning of Dec. 8 to communicate key information and safety messages through local media.
- First use of "Facebook Live" to carry Dec. 8 news conference, with 64,237 views and 160,379 impressions.
- 43 incident updates posted to SDCountyEmergency, with a combined 178,190 views. The most viewed posts included general fire updates (containment, etc.), evacuations and posts pertaining to repopulation of evacuated neighborhoods.
- 90 tweets about the fire and recovery between Dec. 7 and Dec. 11, resulting in 2.1 million impressions and 3,349 retweets.
- Messaging about how to access emergency information tools, which saw 53,089 new installations of the SD County Emergency app and 47,391 new registrations to AlertSanDiego.
- Monitoring and responding to social media questions and misinformation.

The County's ability to provide public information across multiple platforms, including social media, the web-based County News Center, SDCountyEmergency.com, the SD Emergency Mobile App, and AlertSanDiego, are a strength. During an emergency, use of these public information platforms surges, as seen in the Lilac Fire, when tens of thousands of members of the public registered to receive alerts, viewed the emergency website, and downloaded the app.

Spanish Translation Team

Social media and incident updates were provided to the public in Spanish, with the Lilac Fire marking the first time the County's Spanish Translation team was activated in the Joint Information Center. The translation team, formed in 2016, consists of bi-lingual County employees from diverse departments who have received training on translating public information. The employees have volunteered for the role, and they increase the capability of the County to provide emergency information in Spanish.

2-1-1

In an emergency, 2-1-1 San Diego is the region's designated public information phone line, and trained operators at the nonprofit work around-the-clock to provide disaster information. During a disaster, a 2-1-1 liaison works in the Joint Information Center. The liaison ensures 2-1-1 operators have the latest disaster information; likewise, the liaison informs County staff about calling trends, rumors, and public concerns.

Between Dec. 7 and December 18, 2-1-1 answered 18,703 calls about the fire. Some 8,609 were received from Dec. 7 through Dec. 8. Sixty-four percent of calls sought information about evacuation areas and 16 percent about road closures. The majority of the calls were from affected areas, with 31 percent from Oceanside, 23 percent in Fallbrook, and 14 percent from Vista.

RECOMMENDATION:

It is recommended the County work closely with 2-1-1 as it reviews factors that led to the problem during the call spike and addresses any technology issues. The County should also continue to provide trained County employees to staff a backup call center, and practice the switchover procedure to the backup call center with 2-1-1 annually.

In the days leading up to the fire, 2-1-1 San Diego took actions to prepare for a potential incident, including working with its volunteer coordinator, HandsOn San Diego, to increase the readiness of citizen volunteers to respond if needed.

The County has trained employees from the Department of Child Support Services to provide backup staffing to 2-1-1 in a disaster, and the County provides a backup call center to expand capacity in a disaster. Some 60 County employees staffed the backup call center.

2-1-1 provided an effective response to the Lilac Fire, with average answer time of 1 minute and 58 seconds from Dec. 7 to Dec. 18, and 29 seconds on Dec. 8, when the emergency was active and staffing surged to respond.

There was a call center overload after the WEA directed residents to 2-1-1, with wait times extended or callers unable to get through for a period of time lasting about 40 minutes. The problem was caused primarily in a breakdown in the telephony technology when calls spiked. Switching over to the backup call center more quickly may also have helped.

It is recommended the County work closely with 2-1-1 as it reviews factors that led to the problem during the call spike and addresses any technology issues. Additionally, the County will work to provide as much advance notice of outgoing WEA messages to 2-1-1 as is practicable during disasters. The County and 2-1-1 will work together to increase the speed at which County employee operators are integrated to assist during disasters. The County will practice the switchover procedure to the backup call center with 2-1-1 annually.

RECOMMENDATION:

To ensure technology tools function as needed during emergencies, it is recommended the County enhance its coordinated management of these tools. These enhancements could include periodic "stress testing" to ensure the tools are working as designed to expand to emergency-level traffic, and additional Emergency Operations Center personnel designated in emergencies to manage public information technology tools.

Animal Services

Department of Animal Services

During disasters, the Department of Animal Services (DAS) is responsible for rescuing and sheltering animals. The Lilac Fire raged through semi-rural areas where thousands of horses, livestock and household pets lived. Animal response and care, therefore, were significant in this event. DAS, partner agencies, and the community all played a role protecting and caring for animals. Unfortunately, because of fire's speed and intensity, the Lilac Fire was also deadly or life changing for some animals and those who care for them. In addition to the two trainers who suffered serious burns at the San Luis Rey Downs racehorse facility in Bonsall, the Lilac Fire killed more than 45 of the hundreds of horses stabled there.

Over 850 horses were safely evacuated to the Del Mar fairgrounds large animal shelter

However, hundreds of animals were safely evacuated and cared for. Extensive media coverage of healthy, safe animals and fire survivors comforted by their pets showed how much outcomes for pets matter to the community in a disaster.

About an hour after the Lilac Fire's start, fire personnel requested the Department of Animal Services' assistance with evacuating animals. DAS staff and members of the volunteer County Animal Response Team responded with two trailers. DAS also coordinated with the San Diego Humane Society for additional staff and resources. A large number of properties with horses, including San Luis Rey Downs and others, were in the evacuation area; DAS requested the state-operated Del Mar Fairgrounds open as a large animal shelter, as it did in the 2007 firestorms and 2014 May Fires.

Some 850 horses safely evacuated to the fairgrounds. The shelter hosted horses and livestock from the evacuation zone for nine days. Owners, community volunteers and donors, fairgrounds staff and a liaison from the Department of Animal Services cared for the animals in a successful and busy operation.

Throughout the fire, DAS deployed 20 staff members, who worked a total of 408 hours between Dec. 7 and Dec. 16.

The DAS response consisted of:

18
Animal Control Officers

2
Supervising Animal Care Attendants

4
Administrative Staff who worked the Local Assistance Center

People should expect to evacuate their own animals as part of their household, and DAS assists the community with information, training and resources throughout the year to help them prepare their families and pets for emergencies. However, DAS also assists with evacuating animals when possible, and in caring for animals that remain behind in evacuation zones.

In the Lilac Fire, DAS evacuated 34 animals to County shelters and responded to 170 calls for assistance from the community.

The 34 animals evacuated and cared for by the County included:

- 6 dogs
- 10 cats
- 1 chicken
- 1 pig
- 8 rabbits
- 1 turkey
- 3 horses
- 1 Amazon parrot
- 2 goats
- 1 owl

Of those animals, DAS provided extensive veterinary care for three dogs and one cat that suffered burns in the fire and one horse that was injured when an unknown person attempted to evacuate the animal. Three other animals suffered injuries too extensive for their lives to be saved. Several of the animals were later reunited with their owners; others became available for adoption after attempts to find their owners were unsuccessful.

DAS, in partnership with County Animal Response Team (CART) and Valley Center Disaster Animal Response Team (VCDART), also provided food and water and checked on the welfare of approximately 263 pets and livestock that stayed behind at various properties within the evacuation zone.

San Diego Humane Society (SDHS) also evacuated eight horses, four dogs, five ducks and one cat from the fire zone, and these animals were transported to the Humane Society's shelter in Escondido. SDHS responded to 54 calls from the public and provided food and water to animals left behind at 14 residences.

Department of Animal Services response partners included:

- 6 County Animal Response Team (CART) volunteer members
- 6 Valley Center Disaster Animal Response Team (VCDART) volunteer members
- San Diego Humane Society

American Red Cross Shelter Pet Care

DAS coordinates with the American Red Cross for the sheltering of evacuees' pets, and the Red Cross has a Memorandum of Understanding with the San Diego Humane Society for pet care at shelters.

DAS has three disaster trailers, each stocked to provide care for 65 animals in the event of an emergency. In this incident, the department moved one trailer to Palomar College shelter in case evacuees needed any supplies that could not be provided by SDHS.

The SDHS assumed responsibility for the animals at the American Red Cross shelters. In total, they cared for:

- 130 dogs
- 99 cats
- 13 birds
- 2 turtles
- 2 Guinea Pigs
- 1 Chinchilla
- 1 Mouse

RECOMMENDATION:

The Lilac Fire saw an extraordinary need for horse sheltering, and the County's preexisting agreement with the Del Mar Fairgrounds to serve as a disaster shelter for horses and other livestock allowed an effective and seamless response. The County has already identified additional large animal sheltering facilities, but it is recommended the County explore and identify additional locations. In a large scale disaster affecting multiple rural areas, the region could need additional facilities if the Fairgrounds and other identified locations reached capacity or were unavailable because of the fair or another event.

San Diego County Fire Authority

Since 2003, the County has invested more than $460 million in fire protection including personnel, communication systems, equipment, facilities, and technology tools. This investment and the region's unique collaborative wildfire approach, built and matured over the last 15 years, were seen in the Lilac Fire response.

An important element of the funding and collaboration is the San Diego County Fire Authority. The County Fire Authority provides day to day fire and emergency medical service in the County Service Area, which comprises about 1.5 million rural acres, through contract with CAL FIRE. The County Service Area's Insurance Service Office, or ISO, rating of 3/3x is in the top 10 percent nationally, a reflection on the Fire Authority's resource level and effectiveness. The County Fire Authority is not directly responsible for wildland fire protection, because under state mandate, wildfires in the unincorporated area are the state's responsibility, with CAL FIRE the lead agency. In practice, the County and local partner agencies significantly enhance the state wildland fire response. The County Fire Authority's day-to-day integration with CAL FIRE, the Fire Authority's robust staffing and equipment, and County investments in additional resources, such as firefighting aircraft and technology, are important aspects of the enhanced response.

The County Fire Authority provides staffing for 15 CAL FIRE stations in the County Service Area that otherwise would be unstaffed part of the year, or staffed at a lower level. In 2016 and 2017, the County upgraded the level of service from Basic Life Support (BLS) to Advanced Life Support (ALS). Forty-two CAL FIRE/San Diego Fire Authority firefighters were deployed to the Lilac Fire, and the ALS-trained firefighters responded to seriously injured burn victims, which enhanced the level of care they received. Additionally, nine County Fire Authority volunteer reserve firefighters who serve alongside career firefighters were deployed. The County Fire Authority also bolsters the regional response with engines and other equipment.

County Fire Authority resources deployed in the Lilac Fire included:

- 7 **FIRE ENGINES – ALL TYPES**
- 5 **WATER TENDERS – ALL TYPES**
- 7 **STAFF/COMMAND VEHICLES**
- 1 **GIS TRAILER**
- 3 **STAFF/PREVENTION VEHICLES (DAMAGE ASSESSMENT)**

Lilac Fire County funded resources included:

- Three Sheriff's firefighting helicopters. The County funded a third firefighting helicopter after the May 2014 wildfires in North County
- The County "Call When Needed" program, which brought a Type 1 Air-crane helicopter to the region in the Lilac Fire. The program, which was expanded by the Board of Supervisors after the May 2014 fires, budgets money on an annual basis to preposition contract aircraft in Red Flag conditions

County and CAL FIRE San Diego partnerships made available:

- Military aircraft, due to unique agreements between CAL FIRE and the Navy and Marines
- Two firefighting helicopters from the City of San Diego Fire Rescue Department, due to a memorandum of understanding with the City of San Diego for regional night flying capability
- A Type 1 Air-crane helicopter generally available in peak fall fire season through an agreement with San Diego Gas & Electric. The utility brought the asset back to the region for the extreme December weather event, and it flew on the Lilac Fire

Sheltering

Opening shelters involves identifying suitable locations accessible to evacuees, providing beds and food, sanitation, emotional support and other needs. Shelter operations in a regional disaster are typically coordinated through of the County's Operational Area Emergency Operations Center (OA EOC). The coordination includes input and involvement from impacted jurisdictions, local law enforcement representatives, local fire service, and the American Red Cross. During the Lilac Fire an American Red Cross liaison worked in the OA Emergency Operations Center to exchange information between the Red Cross, the shelters, Incident Command and the EOC.

The American Red Cross (ARC) responds to approximately 70,000 disasters in the United States every year, ranging from home fires that affect a single family to hurricanes impacting tens of thousands, to earthquakes that impact millions. Although the American Red Cross is not a government agency, it is an essential part of the response when disaster strikes. The County works closely with the ARC to provide sheltering during an emergency, and has identified hundreds of locations that can serve as ARC shelters in a disaster.

During the Lilac Fire, a total of five ARC shelters and one City of Carlsbad operated shelter were available at various times for evacuees. More than 1,300 people were served.

Photo: American Red Cross

The ARC and Carlsbad shelters also accommodated household pets.

At the time of the Lilac Fire start, the American Red Cross had already established two shelters at Bostonia Park & Recreation Center in El Cajon and the East Valley Community Center in Escondido to serve residents without power in rural East County. These opened Dec. 6 at the request of San Diego Gas & Electric, due to the utility having de-energized lines as a fire prevention measure in the Red Flag conditions. These shelters became available for Lilac Fire evacuees. The ARC also opened shelters at Oceanside High School and Palomar College in San Marcos. The City of Carlsbad opened a shelter at the Stagecoach Community Center. The Escondido, Carlsbad and Oceanside shelters closed Dec. 9; the El Cajon shelter closed Dec. 11; and the Palomar College Shelter closed Dec. 13.

Estimated services provided by American Red Cross shelters:

- **548** shelter stays
- **150** volunteers staffed the shelters
- **3,088** meals served
- **4,878** snacks served

Estimated services provided in the Carlsbad shelters:

- **304** evacuees served
- **254** registered shelter stays
- **50** visitors slept in cars
- **800** meals served
- **1,102** snacks served
- **57** & volunteers city personnel

Shelter Reviews

As shelter operations ramped up, the County deployed several specialized teams to review and coordinate the needs of people who might need extra assistance with health or other access or functional needs, and to ensure the shelters had no safety or health concerns. The County's Disaster Rapid Assessment Team (DRAT), composed of two Public Health nurses and two Behavioral Health Services staff, deployed to Escondido, Oceanside and Carlsbad and made rounds to all the shelters. A third person from the team worked from the County's Medical Operations Center to coordinate any requests from the field team. The role of the DRAT is to evaluate any needs at the shelters regarding communications, medical or mental health needs, operations and facilities.

Likewise, the Vulnerable Adults and Seniors team was deployed by Aging and Independence Services to ensure the shelters met the needs of this population.

The County's Department of Environmental Health Assessment team was also deployed.

Temporary Evacuation Points and Shelter Coordination

The County has worked with the American Red Cross and local jurisdictions to identify Temporary Evacuation Points (TEPs) that can receive evacuees immediately, before shelters open. Preferred TEPs on a pre-identified list can convert to shelters if evacuations are extended overnight. Such TEPs/shelters best serve evacuees and limit the number of times they need to move. In the initial phases of the Lilac Fire, incident commanders referred evacuees to several different TEPs. Ultimately, in coordination with incident command, ARC, and the OA EOC, evacuees were referred to the ARC and Carlsbad shelters, which were providing robust and coordinated services for evacuees, but some evacuees had to move from the TEPs.

Photo: American Red Cross

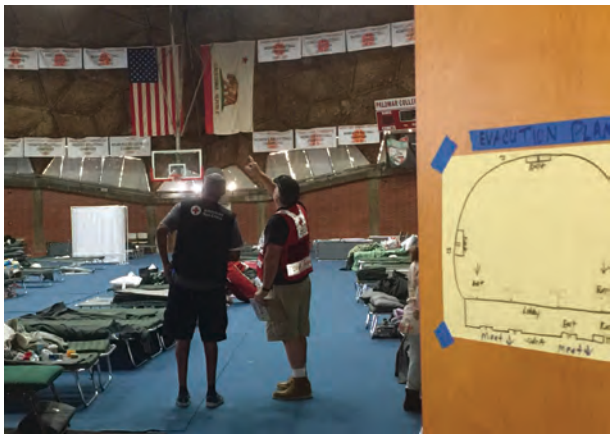


Photo: American Red Cross

RECOMMENDATION:

To provide better coordination in the early stage of evacuations, it is recommended that the County Office of Emergency Services, in partnership with the American Red Cross, provide an annual training or training materials to fire and law enforcement personnel that explains how shelter locations are coordinated out of the Operational Area EOC and how locations can be picked to minimize the need for evacuees to move from their initial location.

Recovery

Damage Assessment

Quick and accurate damage assessment is an important first step in the wake of any disaster. A primary goal of damage assessment is to determine the magnitude of the event and the number of public facilities, homes and businesses that were destroyed or sustained major damage, to determine the level of state and federal assistance that may be available. On Friday Dec. 8, County teams with Planning & Development Services (PDS) and County Fire Authority staff, conducted their first survey of the fire area, with the majority of damage within the boundaries of NCFPD.

Detailed damage assessments began Saturday, Dec. 9 and the County team included PDS, the Department of Public Works (DPW), and the Fire Authority.

Comprehensive damage assessment is an iterative process, as fire survivors over time evaluate and report the extent of their damage. The County completed its initial damage assessment Monday, Dec. 11.

Efficient and accurate damage assessment is also a key step in bringing state and federal assistance to the region. After the initial local damage assessment was complete, the County aggregated private damages with public damages, including damages reported by other jurisdictions within the Operational Area. These were reported to the California Office of Emergency Services (Cal OES) as part of the Initial Damage Estimate process, to substantiate County requests for State and Federal Public Assistance and Small Business Administration (SBA) and Federal Emergency Management Agency (FEMA) Individual Assistance.

RECOMMENDATION:

It is recommended the County explore opportunities for enhanced inter-agency damage assessment coordination and formal planning to define local and state roles and responsibilities for Damage Assessment.

Cal OES, FEMA, and the SBA conducted a joint Preliminary Damage Assessment (PDA) with County personnel to confirm the Operational Area's Initial Damage Estimate. When combined with other damages from the Santa Ana wind event throughout the state, including the Thomas Fire to the north, the San Diego region's Operational Area PDA helped support the state's request for a presidential disaster declaration, to include individual assistance for eligible residents and businesses. The request was granted Jan. 15, 2018.

Damage Assessment:

114 homes
were destroyed and 55 others were damaged

2 business structures
were destroyed and another five damaged

90 other
outbuildings, sheds, or barns were destroyed and 20 damaged.

Recovery Operations

Prior to the Lilac Fire, the County had recently updated its Recovery Plan, developing a dedicated recovery organizational structure, position job descriptions, and recovery protocols and convening numerous recovery preparedness meetings. The Land Use and Environment Group led the effort, coordinating closely with the Office of Emergency Services and other departments. The Recovery Plan was effectively implemented during the Lilac Fire.

County staff implemented recovery roles and actions early in the incident on Dec. 7. Additionally, Cal OES provided two dedicated staff to the County's recovery efforts early in the fire. Cal OES staff co-located with the County's recovery team to provide state information, guidance and assistance.

County and Cal OES staff attended a CAL FIRE-hosted meeting with more than 200 community members present at the Fallbrook Community Center on Saturday, Dec. 9. Residents received victim assistance packets with information on the rebuilding process, how to safely handle ash, and erosion control. County staff also participated in subsequent community and Rancho Monserate homeowners' association meetings to share information about the recovery process, answer fire survivor questions and connect survivors to County services or other help.

Local Assistance Center

On Monday, Dec. 11 at 9 a.m., the County opened a Local Assistance Center (LAC) at the Vista Library to assist fire survivors with a variety of needs. The County had set a goal early in the incident to open the "one-stop shop" to help fire survivors as quickly as possible. Residents were allowed back into the fire area on Sunday, Dec. 10, some to discover or confirm devastating and life-changing losses. The next morning, the LAC opened to help, remaining open for nine days. Residents from approximately 269 households visited the center. Some had lost their homes had smoke damage, while others had a variety of individual needs.

The LAC was staffed by County personnel serving as Disaster Service Workers. Through the County's Advanced Recovery Initiative, hundreds of County personnel are pre-identified and pre-trained to serve in various roles in disaster recovery, including as Local Assistance Center staff. This planning allows LACs to open quickly and other recovery work to happen soon after a disaster strikes, accelerating recovery for the affected community.

More than 30 service providers were represented at the LAC, including County departments, state and federal agencies, and volunteer groups. Services included property-related information and permits; connections to crisis counseling; CalFresh cards; first aid; free pet food and help with animals; information about property tax relief; short-term housing referrals; copies of vital records; and case management and help from the American Red Cross and San Diego Voluntary Organizations Active in Disaster.

The County's Department of Planning & Development Services issued 36 permits while the center was open. Thirty four of those were Emergency Temporary Occupancy Permits, which allowed people to put trailers or other temporary living accommodations on their property while they rebuild.

> *"We lost our house in the fire…that's traumatic enough and you don't know where to turn and I heard that everyone was going to be here…and it's been really helpful." – Paula Barton, Fire Survivor*

Outreach & Communication

During the emergency response, recovery information and resources were posted to the County's recovery website, sdcountyrecovery.com. The County also established a dedicated recovery hotline and email address. The County assisted more than 132 people on the hotline and 42 by email.

Following the fire, the Recovery Team assigned County staff members as individual "liaisons," a specific point of contact for each person whose home was destroyed. The liaisons helped survivors navigate the process for rebuilding, debris removal, and any other needs, and they will be available to residents as long as needed. County liaisons proactively reach out to fire survivors to check in on their recovery progress and to assist them in each phase of recovery.

Photo: John Buchanan, North County Fire Protection District

> *…I do the work that I do every day, day to day, and I never thought I would be part of something bigger than this and helping them out, so it's really rewarding." Mandy Noza, County of San Diego, Planning & Development Services*

Fee Waivers

In the wake of the fire, the County Board of Supervisors took action to waive building fees for any residents to rebuild homes or other damaged structures. Likewise, the Assessor-Recorder proactively mailed applications to property owners to apply to have their destroyed or damaged properties reassessed to lower their property taxes.

Debris Removal

The Department of Environmental Health (DEH) conducted hazardous waste assessments at all damaged properties. Staff oversaw the removal and proper disposal of over 14,500 pounds of recoverable household hazardous waste. On Jan. 6 DEH conducted a household hazardous waste disposal event for fire survivors and collected over 17 tons of waste.

The County initiated a "bin program" to assist residents with damaged or destroyed property to remove debris. Common bins were placed in communities with heavy damage, or on individual properties through agreements with property owners. Several volunteer organizations mobilized to assist fire survivors with ash and debris removal and bins were provided to support the volunteer efforts. The County also coordinated between property owners and San Diego Voluntary Organizations Active in Disaster (VOAD), for assistance with debris removal on private property.

PDS reached out to property owners with burned vehicles on their property, offering no-cost removal service. This program is funded by the Abandoned Vehicle Abatement program, a discontinued state program with funds remaining that allow the County to remove burned vehicles following wildfires.

Erosion Control

After any major wildfire, DPW assesses public roads and structures for erosion or debris flow risk. Through aerial imagery, soil maps, topographic maps, and other references, DPW reviewed and assessed roads and structures threatened by erosion and debris flows in areas affected by the fire. Combined aerial and ground surveys were conducted to identify hazards that represented a threat to life and property. Assessments of public roads were completed Dec. 15, 2017.

DPW oversaw specific mitigation plans developed for each affected public road or facility. Roads most at risk of damage due to post-fire erosion and debris flows were identified as "high priority road" (HPR) sites. DPW identified 20 HPR sites and implemented erosion control measures at each to protect public infrastructure and public safety. Such measures included applying hydraulic mulch to burned slopes, installing gravel and sandbag berms, protecting storm drains, and installing K-rails. Additionally, DPW road crews responded to calls and were ready to respond to clear roads impacted by rain.

On Friday, Dec. 15, the County opened an Erosion Control Assistance Center in Bonsall to help private property owners, including fire survivors and people living in and around the burned areas, with free sandbags, gravel bags, and fiber rolls. The County offered to visit private properties affected by burn areas and advise how to protect structures from erosion. Additionally, the County reached out with erosion control information and guidance through the County News Center, social media, and direct mail to over 900 property owners in the fire impacted areas while also working with stakeholder partners to share the information with their community contacts. These included the Bonsall Community Sponsor Group, homeowner associations, and volunteer group partners.

Some 155 customers visited the center and receive material. From Jan. 6-8, CAL FIRE firefighters worked in the Lilac Fire burned areas to provide erosion control assistance to fire survivors. These proactive mitigation efforts helped protect homes from flooding during January rainfall. The County also worked with the Natural Resource Conservation Service (NRCS) to request potential federal funding from the Emergency Watershed Protection program to assist property owners with erosion control on their private lands.

Long Term Recovery

The San Diego Foundation collected over $395,000 in support of Lilac Fire Recovery from generous community members and businesses. Some of the funding will support VOAD to hire two case managers to work directly with fire survivors to address ongoing needs. FEMA Individual Assistance became available to eligible people who suffered damages or losses from the Lilac Fire.

This assistance may include grants to help pay for:

- Rental assistance
- Essential home repairs
- Uninsured and underinsured personal property losses
- Other serious disaster-related needs not covered by insurance

The County conducted extensive outreach via social media, County News Center, stakeholder groups and volunteer organizations to encourage fire survivors to register with FEMA and the SBA to qualify for any available assistance.

To address remaining survivor needs not addressed by insurance, FEMA, or the SBA, San Diego VOAD established an Unmet Needs Committee. Through case management, the Unmet Needs Committee will continue to work with survivors, and connect them to resources from area community based, faith-based organizations and other service providers.

Lilac Fire Response and Recovery Partners

Public Agency Partners

- 9th Civil Support Team, California Army National Guard
- Arizona Department of Forestry
- Bonsall Elementary School
- Bonsall School District
- CAL FIRE
- Cal OES
- California Conservation Corps
- California Department of Corrections and Rehabilitation
- California Department of Insurance
- California Department of Motor Vehicles
- California Department of Tax and Fee Administration
- California Department of Transportation
- California Employment Development Department
- California Franchise Tax Board
- California Highway Patrol
- California Office of Vital Records
- California State Parks
- City of Carlsbad
- City of Oceanside
- City of San Diego
- City of Vista
- Contractor State License Board
- FEMA
- Los Angeles County Fire
- National City Police Department
- North County Fire Protection District
- Office of the Governor of California
- Public Agencies
- San Diego County Water Authority
- San Diego County's Federal Legislative Delegation
- San Diego County's State Legislative Delegation
- San Diego Gas & Electric Co.
- Small Business Administration
- U.S. Marine Corps
- U.S. Navy
- United States Postal Service
- United States Social Security Administration

Community Partners

- 2-1-1 San Diego
- American Red Cross
- Bonsall Community Sponsor Group
- Burners Without Borders
- Church of Jesus Christ Latter Day Saints
- Community Recovery Team
- Fired Up Sisters
- Friends and Family Community Connection of San Diego
- Interfaith Community Services
- Salvation Army
- San Diego Food Bank
- San Diego Foundation
- San Diego Humane Society
- San Diego Voluntary Organizations Active in Disasters
- Southern California Baptist Disaster Relief
- Team Rubicon
- Tsu Chi Buddhist Relief
- United Methodist Committee on Relief
- United Policy Holders
- United Way of San Diego

County Departments

- Air Pollution Control District
- Assessor/Recorder/County Clerk
- Board of Supervisors
- Chief Administrative Office
- Community Services Group
- County Communications Office
- County Counsel
- County Fire Authority
- County GIS
- County Library
- County Technology Office
- Department of Agriculture, Weights, and Measures
- Department of Animal Services
- Department of Child Support Services
- Department of Environmental Health
- Department of General Services
- Department of Human Resources
- Department of Parks and Recreation
- Department of Public Works
- Department of Purchasing & Contracting
- Department of the Public Defender
- District Attorney
- Emergency Medical Services
- Finance and General Government Group
- Health and Human Services Agency Group
- Health and Human Services Agency, Aging and Independence Services
- Health and Human Services Agency, Behavioral Health Services
- Health and Human Services Agency, Eligibility Operations
- Health and Human Services Agency, Housing and Community Development Services
- Health and Human Services Agency, Public Health Services
- Health and Human Services Agency, Supplemental Nutrition Assistance Program
- Land Use and Environment Group
- Office of Emergency Services
- Office of Strategy and Intergovernmental Affairs
- Planning & Development Services
- Probation Department
- Public Safety Group
- San Diego County Sheriff's Department

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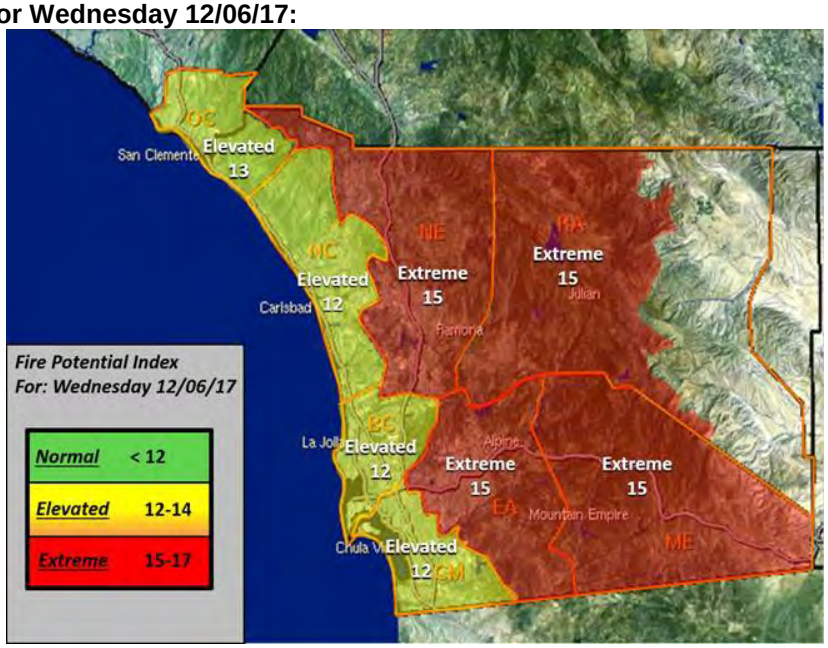
7-Day Fire Potential Index (FPI) Outlook Issued 12/05/17
Red Flag Warning and Extreme Fire Potential

Executive Summary:

- Prolonged Santa Ana wind event and critical fire weather conditions through Saturday
- The Santa Ana Wildfire Threat Index is rated Extreme on Thursday and the FPI may hit 17 in ME and RA
- Widespread strong to locally very strong winds possible late Wednesday night through Friday morning
- The Red Flag Warning is currently in effect for all districts through 0000 Friday and may be extended

Fire Potential Index for Wednesday 12/06/17:



Seven Day FPI Outlook:

	Tue 12/05	Wed 12/06	Thu 12/07	Fri 12/08	Sat 12/09	Sun 12/10	Mon 12/11	Tue 12/12
ME	Extreme 15	Extreme 15	Extreme 17	Extreme 16	Extreme 15	Elevated 14	Elevated 13	Elevated 14
RA	Extreme 15	Extreme 15	Extreme 17	Extreme 16	Extreme 15	Elevated 14	Elevated 13	Elevated 14
EA	Extreme 15	Extreme 15	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 12	Elevated 13
NE	Extreme 15	Extreme 15	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 12	Elevated 13
OC	Extreme 15	Elevated 13	Extreme 15	Extreme 15	Elevated 14	Elevated 13	Normal 11	Normal 11
NC	Elevated 14	Elevated 12	Extreme 15	Elevated 14	Elevated 13	Elevated 12	Normal 11	Normal 11
BC	Elevated 14	Elevated 12	Elevated 14	Elevated 14	Elevated 13	Elevated 12	Normal 11	Normal 11
CM	Elevated 14	Elevated 12	Elevated 14	Elevated 14	Elevated 13	Elevated 12	Normal 11	Normal 11

FPI Discussion: Prolonged Santa Ana winds and critical fire weather conditions today through Saturday. See details below.

- **Timing:** Santa Ana winds will continue through Saturday. The strongest winds are expected Thursday through Friday.

- **Peak Winds:** Widespread moderate strength winds expected today. Gusty winds will retreat upslope into the higher country tonight and become more localized Wednesday. Winds will strengthen significantly late Wednesday night and Thursday morning before becoming more widespread through the day. Strong winds likely to continue through Friday morning before weakening into Saturday.

    - **Today:** Widespread wind gusts 30-45 mph in the backcountry with isolated stronger gusts in wind-prone areas. Local wind gusts between 15-30 mph in some coastal wind corridors.
    - **Wednesday:** Wind gusts 25-40 mph in the backcountry. Isolated stronger gusts in excess of 55 mph in wind-prone areas near the mountain crest. Significant increase in wind Wednesday night.
    - **Thursday:** Widespread wind gusts 50-75 mph in the backcountry. Isolated gusts up to 100 mph possible at Sill Hill. Local wind gusts 25-35 mph in some coastal wind corridors and isolated 50+ mph on coastal hilltops such as Black Mountain & Olivenhain.
    - **Friday:** Widespread wind gusts 40-60 mph in the backcountry. Isolated higher gusts up to 80 mph possible at Sill Hill. Local wind gusts 20-35 mph in some coastal wind corridors.
    - **Saturday:** Locally gusty winds 30-45 mph in the backcountry with isolated stronger gusts in the usual wind-prone areas. Much less wind at the coast.

- **Temperatures:** High temperatures in the 70s west of the mountains through Wednesday, then 80s through Saturday.

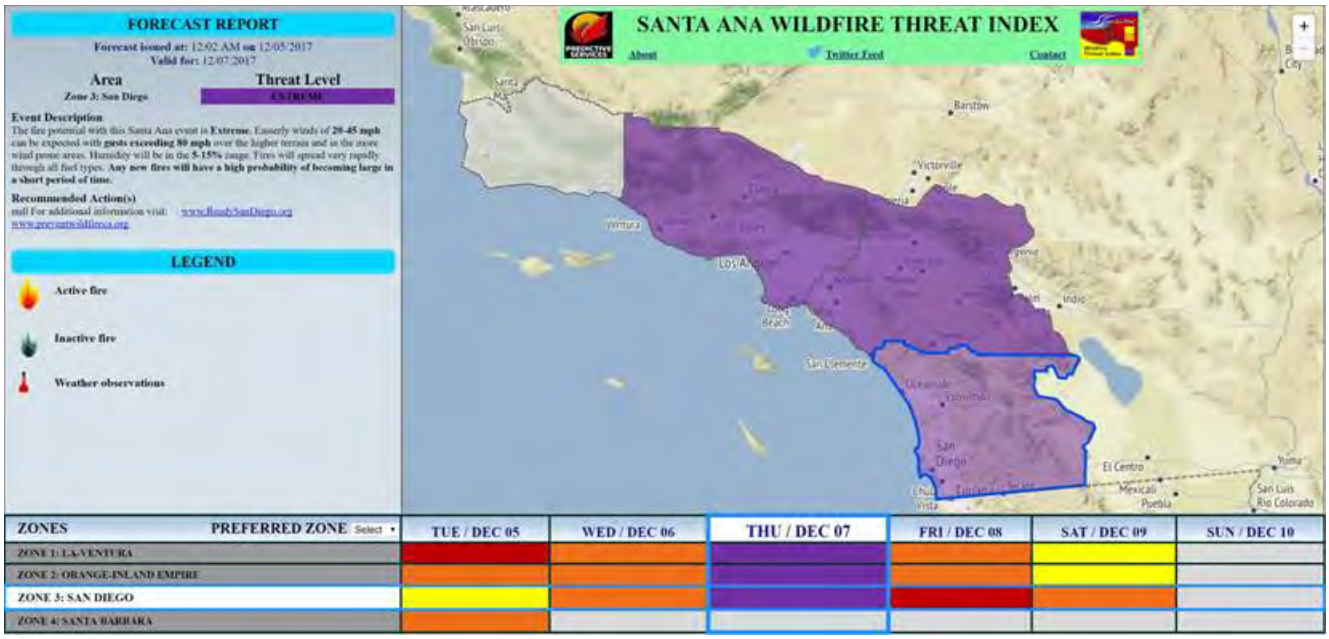
- **Humidity:** Single digit humidity west of the mountains with little to no overnight recovery through Saturday.

- **Fire Potential:** The service territory is on track to have its driest start to winter (Oct. 1st – Dec. 15th) since 1929. As a result, live fuels remain critically dry and there has not yet been any green-up of the grasses. Dead fuels / fine fuels have become very dry and are receptive to ignition. The dry fuels in combination with strong winds and very dry air will result in an extreme wildfire potential across the service territory.

- **Red Flag Warning:** A Red Flag Warning is in effect for Orange County and San Diego County through 12 AM Friday. The Red Flag Warning is likely to be extended. Check the NWS webpage for more details.

- **Santa Ana Wildfire Threat Index:** **This event is rated Extreme.** See graphic below or visit http://sawti.fs.fed.us/ for more details.

    - **Zone 3 (San Diego): Marginal** today, **Moderate** Wednesday, **Extreme** Thursday, **High** Friday, and **Moderate** Saturday.
    - **Zone 2 (OC / I.E.): Moderate** today, **Moderate** Wednesday, **Extreme** Thursday, **Moderate** Friday, and **Marginal** Saturday.
    - **Zone 1 (LA / VTU): High** today, **Moderate** Wednesday, **Extreme** Thursday, **Moderate** Friday, and **Marginal** Saturday.
- **Outlook:** Additional Santa Ana winds possible next week.



Santa Ana Wildfire Threat Index for San Diego County:

Tue 12/05	Wed 12/06	Thu 12/07	Fri 12/08	Sat 12/09	Sun 12/10
Marginal	Moderate	Extreme	High	Moderate	No Rating

No-Rating	Marginal	Moderate	High	Extreme
Santa Ana winds are not expected or will not contribute to significant fire activity.	Upon ignition, fires *may* grow rapidly.	Upon ignition, fires *will* grow rapidly and *will* be difficult to control.	Upon ignition, fires will grow *very* rapidly and will be *very* difficult to control.	Upon ignition, fires will have extreme growth and will be uncontrollable.

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Sent Tuesday, December 5, 2017, at 12:31pm
by Steve Vanderburg, Senior Meteorologist, Emergency Management, San Diego Gas & Electric

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AFDSGX

Area Forecast Discussion
National Weather Service San Diego CA
1013 AM PST Thu Dec 7 2017

.SYNOPSIS...
Santa Ana winds will be strong at times through Friday, with the strongest winds likely this morning. Very dry conditions will prevail through the middle of next week. High temperatures will increase to 5-15 degrees above normal by the weekend, and continue into next week.

&&

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

At 9 AM PST, water vapor satellite imagery displayed an upper-level ridge stretching from central CA, all the way up to southern British Columbia. A 13.2 mb offshore surface pressure gradient from San Diego to Tonopah was creating east to northeast wind gusts of 40-60 mph along coastal mountain slopes and foothills, with a few areas gusting around 75 mph. Peak gust so far this morning was 88 mph at Sill Hill. Check out our PNS for the highest observed gusts as of 9 AM. An extremely dry airmass is in place over San Diego County this morning, with widespread locations calculating relative humidity below 5%.

Winds will peak over the next few hours, with stronger winds surfacing over portions of the valleys and coast by late morning. Winds will weaken slightly overnight, but remain gusty through Friday afternoon. A High Wind Warning remains in effect for the mountains, valleys, San Gorgonio Pass and all of Orange County through 4 pm Friday. The surface high over the Great Basin will weaken by this weekend, however breezy to gusty offshore winds will continue for inland areas through the middle of next week. Upper-level heights building over the region will create high temperatures 5-15 degrees above seasonal normals through the middle of next week.

Models are in disagreement in the placement of the upper-level ridge for the end of next week, with some showing the ridge anchored over SoCal, and some showing it well off the West Coast. No sign of low stratus or precipitation for the next 7 days.

&&

.AVIATION...
071645Z...NE to E winds 25-40 kt with gusts 45-60 kt along the coastal mountain slopes/foothills and through and below the passes and canyons through 08/0000 UTC, resulting in STG-SVR UDDFS/LLWS and possible rotors over and W or SW of the mountains. Strong winds will

likely continue at KONT (greater than 45 kt gusts) and KSNA (greater than 30 kt gusts), and KCRQ and KSAN will probably get some gusty NE surface winds at some point. Winds a little weaker and less widespread 08/0000-1500 UTC, with STG UDDFS/LLWS over and W or SW of the mountains. Local vis 3-6 SM in BLDU possible in the wind prone areas. Otherwise, P6SM vis and mostly SKC through Friday morning.

&&

.MARINE...
Areas of strong and intermittent easterly winds will occur today over the coastal waters. Gusts in those windy areas will reach 25 to 30 kt at times. A Small Craft Advisory remains in effect until 10 PM tonight. No additional marine hazards are expected Friday through Monday.

&&

.FIRE WEATHER...
Extreme fire conditions are taking place this morning, with areas near the mountains and foothills experiencing wind gusts of 40-60 mph, and relative humidity below 5%. A few areas are gusting 75-85 mph this morning. Highest winds are expected before 1200 today, with winds slightly weakening through the weekend. The dry airmass is expected to remain in place for inland areas through at least the middle of next week. The Red Flag Warning currently in effect goes through 8 pm Saturday, however an extension through Sunday may be needed do to winds remaining strong and critical fire weather conditions continuing. High temperatures will increase to 5-15 degrees above seasonal normals by the weekend.

&&

.SKYWARN...
Skywarn activation is not requested. However weather spotters are encouraged to report significant weather conditions.

&&

.SGX WATCHES/WARNINGS/ADVISORIES...
CA...High Wind Warning until 4 PM PST Friday for Orange County Coastal Areas-Orange County Inland Areas-Riverside County Mountains-San Bernardino County Mountains-San Bernardino and Riverside County Valleys-The Inland Empire-San Diego County Mountains-San Diego County Valleys-San Gorgonio Pass Near Banning-Santa Ana Mountains and Foothills.

Red Flag Warning until 8 PM PST Saturday for Orange County Coastal Areas-Orange County Inland Areas-Riverside County Mountains-Including The San Jacinto Ranger District Of The San Bernardino National Forest-San Bernardino County Mountains-Including The Mountain Top And Front Country Ranger Districts Of The San Bernardino National Forest-San Bernardino and Riverside County Valleys -The Inland Empire-San Diego County Coastal Areas-San Diego County Inland Valleys-San Diego County Mountains-Including The Palomar And Descanso Ranger Districts of the Cleveland National Forest-San Gorgonio Pass Near Banning-Santa Ana Mountains-Including The Trabuco Ranger District of the Cleveland National Forest.
PZ...Small Craft Advisory until 10 PM PST this evening for Coastal Waters from San Mateo Point to the Mexican Border and out to 30 nm-Waters from San Mateo point to the Mexican Border Extending 30 to 60 nm out including San Clemente Island.

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PNSSGX
CAZ043-048-050-055>058-060>062-065-552-554-081411-

Public Information Statement
National Weather Service San Diego CA
611 PM PST Thu Dec 7 2017

...Highest 24-Hour Wind Gusts as of 6 PM...

1) Sill Hill	88 MPH	0630 AM 12/07	3556
2) Fremont Canyon	77 MPH	0851 AM 12/07	1780
3) Alpine (4 E)	70 MPH	0910 AM 12/07	2754
4) Pleasants Peak	69 MPH	0630 PM 12/06	3870
5) 8 NNE Valley Center	69 MPH	1030 AM 12/07	3140
6) Big Black Mountain	68 MPH	1037 AM 12/07	4055
7) Highland Springs	65 MPH	0216 PM 12/07	2233
8) Viejas Grade	65 MPH	0910 AM 12/07	3211
9) Running Springs (2 NW)	64 MPH	1115 AM 12/07	6350
10) Pala (4 N)	64 MPH	1220 PM 12/07	2196

Location	Speed	Time/Date	Elevation (ft.)
...Santa Ana Mountains and Foothills...			
Fremont Canyon	77 MPH	0851 AM 12/07	1780
Pleasants Peak	69 MPH	0630 PM 12/06	3870
Sierra Peak (Corona)	46 MPH	0901 PM 12/06	3093
El Cariso	42 MPH	0720 PM 12/06	2733
...San Gorgonio Pass Near Banning...			
Cabazon	52 MPH	0214 PM 12/07	2154
Thousand Palms (5 NNE)	49 MPH	0558 PM 12/06	1066
Whitewater Raws (2 N)	40 MPH	0150 PM 12/07	2546
...San Diego County Mountains...			
Sill Hill	88 MPH	0630 AM 12/07	3556
Big Black Mountain	68 MPH	1037 AM 12/07	4055
Viejas Grade	65 MPH	0910 AM 12/07	3211
Boulder Creek	64 MPH	0720 AM 12/07	3706
Descanso (5 N)	63 MPH	1040 AM 12/07	3609
Descanso (8 NE)	63 MPH	0720 AM 12/07	4740
Palomar Mtn Lookout	62 MPH	0900 AM 12/07	6142
Boulevard (5 NW)	61 MPH	0710 AM 12/07	4114
Campo	60 MPH	1059 AM 12/07	2630
Descanso (1 WSW)	59 MPH	0900 AM 12/07	3877
Palomar Mountain (1 NNW)	58 MPH	0825 PM 12/06	5230
Descanso	58 MPH	0404 PM 12/07	3567
Pine Valley (5 S)	57 MPH	0930 AM 12/07	3263
Julian (4 W)	56 MPH	1020 AM 12/07	3738
Boulevard (8 NW)	56 MPH	0640 AM 12/07	4000
Pine Valley (1 SE)	55 MPH	0630 AM 12/07	4010
Descanso (1 SW)	55 MPH	0310 PM 12/07	3394
Descanso (4 N)	55 MPH	1042 AM 12/07	3329
Mt Laguna	54 MPH	0615 AM 12/07	6300

Mt Laguna (3 W)	53 MPH	0740 AM 12/07	5030
Pine Valley (3 SSW)	53 MPH	0740 AM 12/07	4004
Harrison Park	52 MPH	0130 PM 12/07	4861
Campo (1 SW)	52 MPH	0350 PM 12/07	2433
Wynola West	51 MPH	0250 PM 12/07	3553
Volcan Mountain	51 MPH	0410 PM 12/07	5154
Boulevard (1 W)	50 MPH	0750 AM 12/07	3404
Pine Valley SE	50 MPH	1030 AM 12/07	3939
Campo (3 NE)	50 MPH	1030 AM 12/07	2886
Santa Ysabel (1 SE)	49 MPH	1030 AM 12/07	3314
Pine Hills	48 MPH	0704 AM 12/07	3651
Chihuahua Valley	48 MPH	0330 PM 12/07	4610
Campo (3 NW)	47 MPH	1150 AM 12/07	2848
Santa Ysabel (2 SW)	46 MPH	1220 PM 12/07	3291
Warner Springs (4 SE)	46 MPH	0200 PM 12/07	3242
5 S Julian	46 MPH	0621 AM 12/07	4637
Julian (5 NW)	45 MPH	0830 AM 12/07	4284
Lake Cuyamaca	45 MPH	0110 PM 12/07	4779
Palomar Mountain (2 SE)	45 MPH	1020 AM 12/07	5155
Julian (2 N)	44 MPH	0210 PM 12/07	4131
Warner Springs (3 SE)	44 MPH	1250 PM 12/07	3815
Julian Fire Station	44 MPH	0355 PM 12/07	4238
Boulevard	43 MPH	0350 PM 12/07	3267
Warner Springs (4 SW)	43 MPH	0830 AM 12/07	2803
Lake Morena (1 E)	43 MPH	0350 PM 12/07	3085
Santa Ysabel (6 NW)	42 MPH	0150 PM 12/07	3349
Guatay	41 MPH	0530 AM 12/07	3892
Pine Hills	41 MPH	1030 PM 12/06	4058
Campo (7 NE)	41 MPH	0904 AM 12/07	3268
Julian (1 ESE)	40 MPH	0300 PM 12/07	4201
Ranchita	39 MPH	0250 PM 12/07	4128
Palomar Observatory	39 MPH	0840 AM 12/07	5483
Ranchita (1 NE)	38 MPH	0207 PM 12/07	4415
Palomar Mountain (1 SE)	37 MPH	0908 AM 12/07	5580
Palomar Mountain (2 NE)	37 MPH	0915 AM 12/07	5486
Santa Ysabel North	36 MPH	1050 AM 12/07	3009
Warner Springs (7 NW)	35 MPH	0700 PM 12/06	3244
...San Diego County Inland Valleys...			
Alpine (4 E)	70 MPH	0910 AM 12/07	2754
8 NNE Valley Center	69 MPH	1030 AM 12/07	3140
Pala (4 N)	64 MPH	1220 PM 12/07	2196
Otay Mountain	59 MPH	1140 AM 12/07	3359
North Boulder Creek	59 MPH	1040 AM 12/07	3091
Alpine (1 NE)	54 MPH	0650 AM 12/07	2667
Pauma Valley (5 E)	53 MPH	0340 AM 12/07	2579
Round Potrero	51 MPH	1230 PM 12/07	2634
Pala (2 W)	51 MPH	1150 AM 12/07	455
Mission Trails	50 MPH	0300 PM 12/07	901
Otay Mountain	50 MPH	1214 PM 12/07	3283
Alpine	49 MPH	0952 AM 12/07	2810
Potrero (2 NE)	49 MPH	0920 AM 12/07	2532
Potrero	49 MPH	1200 PM 12/07	2360
Pauma Creek	49 MPH	1110 AM 12/07	1032
Barrett Junction (1 SE)	48 MPH	1210 PM 12/07	1221
Scripps Ranch	48 MPH	0240 PM 12/07	779
7 S Jamul	47 MPH	0330 PM 12/07	565
San Diego Country Estates	47 MPH	1040 AM 12/07	1684
Rainbow (4 E)	47 MPH	0300 PM 12/07	1292
Rincon (5 E)	47 MPH	0240 PM 12/07	2457
Ramona (4 NE)	47 MPH	1050 AM 12/07	2337
Santa Ysabel (4 SW)	46 MPH	0250 PM 12/07	2517
Santa Ysabel Ranch	46 MPH	0720 AM 12/07	2943
Jamul (7 E)	46 MPH	0515 AM 12/07	3760
Sycamore Canyon	46 MPH	0240 PM 12/07	1038

Alpine (7 SE)	45 MPH	1230 PM 12/07	2834
Santa Ysabel (5 SE)	44 MPH	0200 PM 12/07	2604
Alpine Heights (1 SW)	44 MPH	0110 PM 12/07	1375
Rainbow (1 ENE)	44 MPH	1110 AM 12/07	1869
Viejas	43 MPH	0930 AM 12/07	2345
Rainbow	43 MPH	1140 AM 12/07	1058
Hodges Dam	43 MPH	0230 PM 12/07	375
Barona	42 MPH	1240 PM 12/07	1319
Dye Mountain	42 MPH	0220 PM 12/07	2998
Barona Mesa	42 MPH	1030 AM 12/07	1924
Olivenhain	41 MPH	0150 PM 12/07	1167
Sky Valley	41 MPH	1130 AM 12/07	2248
Ramona Airport	41 MPH	1114 AM 12/07	1393
Fallbrook	41 MPH	1050 AM 12/07	953
San Diego Country Estates	40 MPH	1120 AM 12/07	1849
Highland Valley	40 MPH	1120 AM 12/07	1358
Pauma Valley	40 MPH	1110 AM 12/07	1817
2 WNW Fallbrook	40 MPH	0222 PM 12/07	441
7 SSE Alpine	40 MPH	0300 PM 12/07	2262
Rainbow (1 E)	40 MPH	0138 PM 12/07	2037
San Clemente (5 E)	39 MPH	0122 PM 12/07	810
Hellhole Canyon	39 MPH	0130 PM 12/07	2001
Jamul (7 ENE)	39 MPH	0120 PM 12/07	2552
Harbison Canyon (2 S)	39 MPH	0340 PM 12/07	762
Ramona (8 N)	39 MPH	1050 AM 12/07	1010
Rainbow (2 WSW)	39 MPH	0216 PM 12/07	1600
Alpine (3 Se)	39 MPH	0440 PM 12/07	1840
Rincon (2 SE)	39 MPH	0950 PM 12/06	896
Dulzura (3 N)	38 MPH	0950 AM 12/07	2384
Roblar Canyon (Camp Pendleto	38 MPH	0322 PM 12/07	915
Ramona (5 W)	38 MPH	0310 PM 12/07	1479
Lake San Marcos (3 SE)	38 MPH	0854 AM 12/07	540
Ramona (3 NW)	38 MPH	1050 AM 12/07	1536
Valley Center (3 NNW)	38 MPH	1240 PM 12/07	999
Ramona (4 W)	38 MPH	1100 AM 12/07	1540
Alpine Heights (1 S)	37 MPH	1150 AM 12/07	1807
Poway (1 ESE)	37 MPH	1128 AM 12/07	584
Rancho Bernardo West	37 MPH	0320 PM 12/07	749
Alpine (2 WSW	37 MPH	1150 AM 12/07	1554
Lakeside (2 ESE)	37 MPH	0340 PM 12/07	780
Poway (3 NE)	37 MPH	1131 AM 12/07	4232
Valley Center (4 NE)	36 MPH	0310 PM 12/07	1835
Potrero North	36 MPH	0220 PM 12/07	2302
Ramona (2 SSE)	36 MPH	0150 PM 12/07	1443
Ramona (1 SW)	36 MPH	1111 AM 12/07	1420
Rincon	36 MPH	1150 AM 12/07	1065
Poway (4 SW)	36 MPH	1125 AM 12/07	727
San Pasqual Valley	36 MPH	0209 PM 12/07	206
Ramona (4 SW)	35 MPH	0920 AM 12/07	1594
Mt Woodson	35 MPH	0215 PM 12/07	2850
Dulzura	35 MPH	1150 AM 12/07	1425
Flinn Springs (1 NE)	35 MPH	1040 AM 12/07	1191
...San Diego County Coastal Areas...			
Miramar MCAS	47 MPH	1036 AM 12/07	478
Mission Valley	45 MPH	0325 PM 12/07	319
Tecolote Canyon	42 MPH	1210 PM 12/07	273
Carlsbad (2 W)	41 MPH	1226 PM 12/07	364
Brown Field	40 MPH	0309 PM 12/07	525
La Jolla Heights	39 MPH	0240 PM 12/07	409
1 WNW Lemon Grove	38 MPH	0259 PM 12/07	442
San Miguel	37 MPH	0250 PM 12/07	424
Imperial Beach (2 SE)	37 MPH	0150 PM 12/07	328
Imperial Beach (NAS)	37 MPH	1244 PM 12/07	23
Montgomery Field	37 MPH	1117 AM 12/07	420

Mission Valley (1 S)	37 MPH	0310 PM 12/07	301
Mission Beach	36 MPH	1210 PM 12/07	13
North Island NAS	35 MPH	0306 PM 12/07	26
Camp Pendleton South	35 MPH	0323 PM 12/07	245
San Miguel	35 MPH	0230 PM 12/07	500

...San Bernardino and Riverside County Valleys-The Inland Empire...

Highland Springs	65 MPH	0216 PM 12/07	2233
Ontario Airport	55 MPH	0853 AM 12/07	947
Ontario (6 SE)	49 MPH	0850 AM 12/07	816
San Jacinto	49 MPH	0239 PM 12/07	1522
Chino Airport	49 MPH	0853 AM 12/07	680
Rialto	48 MPH	0623 AM 12/07	4685
Devore	46 MPH	1110 PM 12/06	2081
Corona Airport	41 MPH	1244 PM 12/07	531
San Antonio Heights (1 SE)	40 MPH	0219 PM 12/07	1778
Rialto (2 S)	40 MPH	1020 PM 12/06	1142
Hemet (7 E)	39 MPH	1016 AM 12/07	1950
San Bernardino Csu	38 MPH	0717 AM 12/07	1520
Temescal	38 MPH	0141 PM 12/07	1708
Riverside Airport	37 MPH	0841 PM 12/06	818
Lake Mathews (1 SW)	37 MPH	0716 PM 12/06	1516
Muscoy	36 MPH	0920 PM 12/06	1313
Beaumont Fire Station	36 MPH	1214 PM 12/07	2604
Chino (1 E)	36 MPH	0125 PM 12/07	731
Redlands	35 MPH	0555 PM 12/06	1570
Murrieta Hot Springs	35 MPH	0135 PM 12/07	1339

...San Bernardino County Mountains...

Running Springs (2 NW)	64 MPH	1115 AM 12/07	6350
2 NNW Banning	57 MPH	0313 PM 12/07	3609
Crestline	56 MPH	1230 PM 12/07	5298
Cherry Valley (1 NW)	38 MPH	1122 AM 12/07	3057
Burns Canyon	37 MPH	1251 PM 12/07	6284
Big Bear Airport	35 MPH	0815 PM 12/06	6752

...Riverside County Mountains...

Banning (5 NNW)	54 MPH	0214 PM 12/07	3830
Mountain Center	52 MPH	0217 PM 12/07	4701
Pine Cove (8 NW)	44 MPH	1201 PM 12/07	4906
Anza	39 MPH	0154 PM 12/07	3939
9 SE Mountain Center	35 MPH	0838 PM 12/06	4550
Anza (5 NNE)	35 MPH	0850 AM 12/07	4599

...Orange County Inland...

1 W Placentia	43 MPH	0328 PM 12/07	247
Coto De Caza (3 S)	40 MPH	0651 PM 12/06	793
Portola Hills (1 WNW)	40 MPH	1047 PM 12/06	969
Los Alamitos (2 SE)	40 MPH	1109 AM 12/07	36
Yorba Linda (1 NNW)	39 MPH	0338 PM 12/07	520

...Orange County Coastal...

Santa Ana Airport	37 MPH	0815 PM 12/06	50
San Clemente Pier (3 S)	36 MPH	1143 AM 12/07	32

...Coachella Valley...

Thousand Palms (5 NE)	36 MPH	0610 PM 12/06	1089

...Apple and Lucerne Valleys...

Victorville (5 N)	35 MPH	0300 PM 12/07	4650

...Maritime Stations...

Mission Bay Channel	38 MPH	1126 AM 12/07	22
Pacific Beach (Crystal Pier)	37 MPH	1056 AM 12/07	15

LILAC FIRE
INCIDENT UPDATE

Date: 12/8/2017 **Time:** 7:00 PM

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Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/07/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 15%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/17
Structures Threatened: 1500	**Structures Destroyed:** 105	**Structures Damaged:** 15

CURRENT SITUATION	
Current Situation:	This morning CAL FIRE Incident Management Team 1 assumed command of the incident. The team is in unified command with Oceanside Fire Department, Vista Fire Department, North County Fire Protection District and the San Diego County Sherrif Department. Due to favorable weather conditions throughout the day, firefighters were able to make progress with containment lines. Firefighters can expect favorable wather conditions throughout the night. The Red Flag Warning will remain in effect until 8pm Sunday. CAL FIRE and Cal OES damage assessment teams have began their inspections. As inspections are completed, damaged and destroyed numbers are likely to change. San Diego County residents should visit ReadySanDiego.org for information on emergency preparedness and incident updates.
Evacuations:	**Evacuation Orders:** West Lilac Rd. & Sullivan Middle School. South of Burma Rd. East of Wilshire North of N. River Rd. West of S. Mission Ave South of Reche Rd., West of I-15 Freeway, East of Green Canyon Rd. & S. Mission Rd., North of Hwy 76 **Evacuation Warnings:** North of Pala Rd. South of Reche Rd. West of I-15 Freeway East of Green Canyon Rd. & W. Mission Rd. West of Wilshire to North River Road. South of North River Road from Wilshire to Holly Lane. South of Holly lane from North River Road to Mission Rd. South of Little Gopher Canyon Road to Sagewood Road. South of Dentro De Lomas at Nors Ranch Road. Via Maria Elena South of Camino Del Rey.

	Camino Del Rey South of Bobritt Lane. Aquaduct Road South of Via Ulner Way. North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road. South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos. Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road. Knottwood Way north of Flowerwood Lane. Gird Road north of Mary Lewis Drive. Sage Road north of Brodea Lane.
Evacuation Centers:	Pala Casino @ 11154 CA-76, Pala East Valley Community Center @ 2245 E. Valley Parkway, Escondidio Stagecoach Community Park @ 3420 Camino De Los Coches, Carlsbad Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	Highway 76 from Interstate 15 and East Vista Way

ASSIGNED RESOURCES				
Engines: 103	**Water Tenders:** 8	**Helicopters:** 4	**Air Tankers:**	**Hand Crews:** 18
Dozers: 6	**Other:** 1	**Total Personnel:** 829		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES

LILAC FIRE INCIDENT UPDATE

Date: 12/9/2017 **Time:** 7:00 AM

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Incident Information Line: 211
Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/07/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 20%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/17
Structures Threatened: 1500	**Structures Destroyed:** 105	**Structures Damaged:** 15

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 is in unified command with Oceanside Fire Department, Vista Fire Department, North County Fire Protection District and the San Diego County Sheriff Department. Throughout the night, firefighters were able to increase containment lines. This morning, weather will be favorable. However, this afternoon shifting winds are predicted which will create active fire throughout the day. This evening, Santa Ana winds and low relative humidity are forecasted. The Red Flag Warning will remain in effect until 8pm Sunday. CAL FIRE and Cal OES damage assessment teams have begun their inspections. As inspections are completed, damaged and destroyed numbers are likely to change.
Evacuations:	**Evacuation Orders:** West Lilac Rd. & Sullivan Middle School. South of Burma Rd. East of Wilshire North of N. River Rd. West of S. Mission Ave South of Reche Rd., West of I-15 Freeway, East of Green Canyon Rd. & S. Mission Rd., North of Hwy 76 **Evacuation Warnings:** North of Pala Rd. South of Reche Rd. West of I-15 Freeway East of Green Canyon Rd. & W. Mission Rd. West of Wilshire to North River Road. South of North River Road from Wilshire to Holly Lane. South of Holly lane from North River Road to Mission Rd. South of Little Gopher Canyon Road to Sagewood Road. South of Dentro De Lomas at Nors Ranch Road. Via Maria Elena South of Camino Del Rey.

	Camino Del Rey South of Bobritt Lane. Aquaduct Road South of Via Ulner Way. North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road. South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos. Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road. Knottwood Way north of Flowerwood Lane. Gird Road north of Mary Lewis Drive. Sage Road north of Brodea Lane.
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos East Valley Community Center @ 2245 E. Valley Parkway, Escondidio Stagecoach Community Park @ 3420 Camino De Los Coches, Carlsbad ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	Highway 76 from Interstate 15 and East Vista Way

ASSIGNED RESOURCES				
Engines: 103	**Water Tenders:** 8	**Helicopters:** 4	**Air Tankers:**	**Hand Crews:** 18
Dozers: 6	**Other:** 1	**Total Personnel:** 829		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES

LILAC FIRE INCIDENT UPDATE

Date: 12/9/2017 **Time:** 7:00 PM

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Incident Information Line: 211
Incident Websites:
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www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/07/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 50%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/17
Structures Threatened: 1500	**Structures Destroyed:** 182	**Structures Damaged:** 23

CURRENT SITUATION

Current Situation:

CAL FIRE Incident Management Team 1 is in unified command with Oceanside Fire Department, Vista Fire Department, North County Fire Protection District and the San Diego County Sheriff Department.

Firefighters continue to improve and increase containment lines. Weather which includes the winds, has been favorable for firefighters. Expected weather may prove challenging this evening, but firefighters continue strengthening containment lines in preparation for challenging wind conditions. Red Flag Warning will remain throughout the weekend, until 8pm Sunday.

CAL FIRE and Cal OES damage assessment teams continue their inspections of the fire area.

CAL FIRE Incident Management Team 1 is continuing to evaluate a safe repopulation of the effected residents within the mandatory evacuation areas.

Evacuations:

Evacuation Orders:
West Lilac Rd. & Sullivan Middle School.
South of Burma Rd. East of Wilshire North of N. River Rd. West of S. Mission Ave
South of Reche Rd., West of I-15 Freeway,
East of Green Canyon Rd. & S. Mission Rd., North of Hwy 76

Evacuation Warnings:
North of Pala Rd. South of Reche Rd. West of
I-15 Freeway East of Green Canyon Rd. & W. Mission Rd.
West of Wilshire to North River Road.
South of North River Road from Wilshire to Holly Lane.
South of Holly lane from North River Road to Mission Rd.
South of Little Gopher Canyon Road to Sagewood Road.
South of Dentro De Lomas at Nors Ranch Road.
Via Maria Elena South of Camino Del Rey.

	Camino Del Rey South of Bobritt Lane. Aquaduct Road South of Via Ulner Way. North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road. South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos. Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road. Knottwood Way north of Flowerwood Lane. Gird Road north of Mary Lewis Drive. Sage Road north of Brodea Lane.
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	Highway 76 from Interstate 15 and East Vista Way

ASSIGNED RESOURCES

Engines: 163	**Water Tenders:** 24	**Helicopters:** 14	**Air Tankers:**	**Hand Crews:** 23
Dozers: 22	**Other:** 3	**Total Personnel:** 1409		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES

LILAC FIRE INCIDENT UPDATE

Date: 12/10/17 **Time:** 7:00 AM

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Incident Information Line: 211
Incident Websites:
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INCIDENT FACTS		
Incident Start Date: 12/07/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 60%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/17
Structures Threatened: 1500	**Structures Destroyed:** 182	**Structures Damaged:** 23

CURRENT SITUATION

Current Situation:

CAL FIRE Incident Management Team 1 is in unified command with Oceanside Fire Department, Vista Fire Department, North County Fire Protection District and the San Diego County Sheriff Department.

Firefighters continue to improve and increase containment lines. Weather which includes the winds, has been favorable for firefighters. While forecast Santa Ana winds came to fruition in the vicinity of the fire, the strongest winds did not surface near the fire. Red Flag Warning will remain throughout the weekend, until 8pm Sunday.

CAL FIRE and San Diego County Fire damage assessment teams continue their inspections of the fire area.

CAL FIRE Incident Management Team 1 is continuing to evaluate a safe repopulation of the

Evacuations:

Evacuation Orders:
West Lilac Rd. & Sullivan Middle School.
South of Burma Rd. East of Wilshire North of N. River Rd. West of S. Mission Ave
South of Reche Rd., West of I-15 Freeway,
East of Green Canyon Rd. & S. Mission Rd., North of Hwy 76

Evacuation Warnings:
North of Pala Rd. South of Reche Rd. West of
I-15 Freeway East of Green Canyon Rd. & W. Mission Rd.
West of Wilshire to North River Road.
South of North River Road from Wilshire to Holly Lane.
South of Holly lane from North River Road to Mission Rd.
South of Little Gopher Canyon Road to Sagewood Road.
South of Dentro De Lomas at Nors Ranch Road.
Via Maria Elena South of Camino Del Rey.

	Camino Del Rey South of Bobritt Lane. Aquaduct Road South of Via Ulner Way. North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road. South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos. Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road. Knottwood Way north of Flowerwood Lane. Gird Road north of Mary Lewis Drive. Sage Road north of Brodea Lane.
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	Highway 76 from Interstate 15 and East Vista Way

ASSIGNED RESOURCES

Engines: 163	**Water Tenders:** 24	**Helicopters:** 14	**Air Tankers:**	**Hand Crews:** 23
Dozers: 22	**Other:** 3	**Total Personnel:** 1409		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES, CAL OES, San Diego Sheriff's Office, Rainbow Water District, SDC Water Agency, San Diego County Roads, San Diego County Department of Environmental Health, San Diego Humane Society, Arizona Department of Forestry, LA County Fire

FIRE LILAC INCIDENT UPDATE

Date: 12/10/17 **Time:** 7:00 PM

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Incident Information Line: 211
Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS			
Incident Start Date: 12/07/2017		**Incident Start Time:** 11:15 AM PST	
Incident Type: Wildfire		**Cause:** Under Investigation	
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego			
Acreage: 4,100		**Containment:** 75%	
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/17	
Structures Threatened:	**Structures Destroyed:** 151	**Structures Damaged:** 56	

CURRENT SITUATION

Current Situation:	CAL FIRE Incident Management Team 1 is in unified command with Vista Fire Department, North County Fire Protection District and the San Diego County Sheriff Department. Residents may return to their homes now that the mandatory evacuation order has been lifted. This includes Hwy 76 and all the affected areas of the fire. Firefighters continue to harden and increase containment lines. Red Flag Warnings are still in effect until 8PM tonight, but firefighters will continue to patrol the fire's area for any hot spots throughout the evening. CAL FIRE and San Diego County Fire damage assessment teams continue their inspections.
Evacuations:	Evacuation orders were lifted at 2:30pm today. The two following areas will remain closed to everyone except residents with identification: Rancho Monserate Country Club The area between 5200 Olive Hill Rd. and 5800 Olive Hill Rd.

Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos Bostonia Park & Recreation Center, 1049 Bostonia St., El Cajon ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	

ASSIGNED RESOURCES

Engines: 140	**Water Tenders:** 29	**Helicopters:** 11	**Air Tankers:**	**Hand Crews:** 33
Dozers: 17	**Other:** 3	**Total Personnel:** 1659		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES, CAL OES, Rainbow Water District, SDC Water Agency, San Diego County Roads, San Diego County Department of Environmental Health, San Diego Humane Society

LILAC FIRE
INCIDENT UPDATE

Date: 12/11/2017 **Time:** 7:00 AM

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Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/11/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76 , North County San Diego		
Acreage: 4,100		**Containment:** 80%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 151	**Structures Damaged:** 56

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 is in unified command with, North County Fire Protection District and the San Diego County Sheriff Department. Residents may return to their homes now that the mandatory evacuation order has been lifted. This includes Hwy 76 and all the affected areas of the fire. CAL FIRE and San Diego County Fire damage assessment teams continue their inspections.
Evacuations:	The two following areas will remain closed to everyone except residents with identification: Rancho Monserate Country Club The area between 5200 Olive Hill Rd. and 5800 Olive Hill Rd.
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos Bostonia Park & Recreation Center, 1049 Bostonia St., El Cajon ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 140	**Water Tenders:** 29	**Helicopters:** 11	**Air Tankers:**	**Hand Crews:** 33
Dozers: 17	**Other:** 3	**Total Personnel:** 1659		
Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES, CAL OES Rainbow Water District, SDC Water Agency, San Diego County Roads, San Diego County Department of Environmental Health, San Diego Humane Society				

LILAC FIRE INCIDENT UPDATE

Date: 12/11/2017 **Time:** 7:00 PM

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Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/7/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 90%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 157	**Structures Damaged:** 64

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 is in unified command with, North County Fire Protection District and the San Diego County Sheriff Department. Residents may return to their homes now that the mandatory evacuation order has been lifted. This includes Hwy 76 and all the affected areas of the fire. CAL FIRE and San Diego County Fire damage assessment teams have completed inspections.
Evacuations:	The two following areas will remain closed to everyone except residents with identification: The area between 5200 Olive Hill Rd. and 5800 Olive Hill Rd. Rancho Monserate Country Club
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 97	**Water Tenders:** 12	**Helicopters:** 6	**Air Tankers:**	**Hand Crews:** 31
Dozers: 10	**Other:** 3	**Total Personnel:** 1399		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES, CAL OES Rainbow Water District, SDC Water Agency, San Diego County Roads, San Diego County Department of Environmental Health, San Diego Humane Society

LILAC FIRE INCIDENT UPDATE

Date: 12/12/2017 **Time:** 7:00 AM

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Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/7/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 92%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 157	**Structures Damaged:** 64

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 is in unified command with, North County Fire Protection District and the San Diego County Sheriff Department. Residents may return to their homes now that the mandatory evacuation order has been lifted. This includes Hwy 76 and all the affected areas of the fire. CAL FIRE and San Diego County Fire damage assessment teams have completed inspections.
Evacuations:	The two following areas will remain closed to everyone except residents with identification: Rancho Monserate Country Club
Evacuation Centers:	Palomar College, 1140 W. Mission Rd., San Marcos ***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 97	**Water Tenders:** 12	**Helicopters:** 6	**Air Tankers:**	**Hand Crews:** 31
Dozers: 10	**Other:** 3	**Total Personnel:** 1399		

Cooperating Agencies: California Highway Patrol, SDG&E, San Diego County Fire, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, 2-1-1, San Diego County OES, CAL OES Rainbow Water District, SDC Water Agency, San Diego County Roads, San Diego County Department of Environmental Health, San Diego Humane Society

LILAC FIRE INCIDENT UPDATE

Date: 12/12/2017 **Time:** 7:00 PM

@CALFIRESANDIEGO
@READYSANDIEGO

CALFIRE
CALFIRE.SDCFA
READYSANDIEGO

Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/7/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 95%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 157	**Structures Damaged:** 64

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 will be transitioning to the local unit tomorrow morning. Residents may return to their homes now that the mandatory evacuation order has been lifted. CAL FIRE and San Diego County Fire damage assessment teams have completed inspections.
Evacuations:	The two following areas will remain closed to everyone except residents with identification: Rancho Monserate Country Club
Evacuation Centers:	***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 69	**Water Tenders:** 2	**Helicopters:** 3	**Air Tankers:**	**Hand Crews:** 23
Dozers: 10	**Other:** 3	**Total Personnel:** 944		

Cooperating Agencies: California Highway Patrol, San Diego County Fire, San Diego County Sheriff's Office, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, San Diego County OES, CAL OES, San Diego County Department of Environmental Health, and CCC

LILAC FIRE INCIDENT UPDATE

Date: 12/13/2017 **Time:** 7:00 AM

@CALFIRESANDIEGO
@READYSANDIEGO

CALFIRE
CALFIRE.SDCFA
READYSANDIEGO

Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/7/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 95%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 157	**Structures Damaged:** 64

CURRENT SITUATION	
Current Situation:	CAL FIRE Incident Management Team 1 will be transitioning to the local unit this morning. Residents may return to their homes now that the mandatory evacuation order has been lifted. CAL FIRE and San Diego County Fire damage assessment teams have completed inspections.
Evacuations:	The following area will remain closed to everyone except residents with identification: Rancho Monserate Country Club
Evacuation Centers:	***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 61	**Water Tenders:** 1	**Helicopters:** 3	**Air Tankers:**	**Hand Crews:** 19
Dozers:	**Other:** 3	**Total Personnel:** 779		

Cooperating Agencies: California Highway Patrol, San Diego County Fire, San Diego County Sheriff's Office, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, San Diego County OES, CAL OES, San Diego County Department of Environmental Health, and CCC

LILAC FIRE
INCIDENT UPDATE

Date: 12/13/2017 **Time:** 7:00 PM

@CALFIRESANDIEGO
@READYSANDIEGO

CALFIRE
CALFIRE.SDCFA
READYSANDIEGO

Incident Information Line: 211

Incident Websites:
www.fire.ca.gov/current_incidents
www.readysandiego.org

INCIDENT FACTS		
Incident Start Date: 12/7/2017		**Incident Start Time:** 11:15 AM PST
Incident Type: Wildfire		**Cause:** Under Investigation
Incident Locations: Interstate 15 c/o Highway 76, North County San Diego		
Acreage: 4,100		**Containment:** 96%
Firefighter Injuries: 0	**Civilian Fatalities:** 0	**Expected Full Containment:** 12/21/2017
Structures Threatened: 0	**Structures Destroyed:** 157	**Structures Damaged:** 64

CURRENT SITUATION	
Current Situation:	Incident has transitioned management to local unit. A Red Flag Warning has been issued for San Diego County for Thursday morning through Friday morning due to gusty winds and low humidity. CAL FIRE and San Diego County Fire damage assessment teams have completed inspections.
Evacuations:	The following area will remain closed to everyone except residents with identification: Rancho Monserate Country Club
Evacuation Centers:	***Large Animal Shelter*** Del Mar Fairgrounds @ 2260 Jimmy Durante Blvd, Del Mar
Road Closures:	None

ASSIGNED RESOURCES				
Engines: 19	**Water Tenders:**	**Helicopters:** 2	**Air Tankers:**	**Hand Crews:** 8
Dozers:	**Other:** 1	**Total Personnel:** 264		
Cooperating Agencies: California Highway Patrol, San Diego County Fire, San Diego County Sheriff's Office, Cal Trans, California Department of Corrections and Rehabilitation, Red Cross, San Diego County OES, CAL OES, San Diego County Department of Environmental Health, and CCC				

CAL FIRE NEWS RELEASE

California Department of Forestry and Fire Protection

TIME:5:00PM **RELEASE DATE:** December 8, 2017

LILAC 5 FIRE REPOPULATION

All the listed areas have been reduced from an evacuation order to an evacuation warning.

- West of Wilshire to North River Road.
- South of North River Road from Wilshire to Holly Lane.
- South of Holly lane from North River Road to Mission Rd.
- South of Little Gopher Canyon Road to Sagewood Road.
- South of Dentro De Lomas at Nors Ranch Road.
- Via Maria Elena South of Camino Del Rey.
- Camino Del Rey South of Bobritt Lane.
- Aquaduct Road South of Via Ulner Way.
- North of Tumbleweed Lane between Sleeping Indian Road and Olive Hill Road.
- South Mission north of Hellers Bend. Sunset Grove Road north of Via Encinos.
- Alta Vista Drive north of Palomar Drive. Linda Vista Drive north of La Canada Road.
- Knottwood Way north of Flowerwood Lane.
- Gird Road north of Mary Lewis Drive.
- Sage Road north of Brodea Lane.

SAFETY MESSAGE- The public is reminded to stay vigilant on current fire conditions. Please continue to adhere to road closures and any evacuation orders or warnings. If you see electrical wires on the ground, stay clear and contact SDG&E immediately. Trees and poles with deep charring, particularly if still smoking, should be considered hazardous. Please drive slowly and yield to emergency personnel in the area.

As you re-enter your property and evaluate damage, be aware that hazardous conditions may exist, particularly if a residence or out-building has burned. Hazards may include asbestos, heavy metals, by-products of plastic combustion and various other chemicals.

Residents are asked to be READY: Get SET: Prepare your family and home ahead of time for the possibility of having to evacuate. Be ready to GO: Take the evacuation steps necessary to give your family and home the best chance of surviving a wildfire. For more information visit www.ReadyForWildfire.org.

###

Summary of Fixed Wing and Helicopter support during Lilac Fire

Fixed Wing

Summary of Fixed Wing air support during Lilac Fire
Incident: 2017 CAMVU 024612 - Lilac 5

FW ID	12/7/2017		12/8/2017		12/9/2017		Grand Total	
	flights	retardant	flights	retardant	flights	retardant	flights	retardant
A330 (OV-10)	1	0	1	0			2	0
T70 (S2T)	9	9,000	3	3,000			12	12,000
T86 (S2T)	10	10,400	3	3,000			13	13,400
T71 (S2T)	9	9,000	3	3,000			12	12,000
T12-C (BAe 146)	8	23,200	2	5,700			10	28,900
T90 (S2T)	3	2,000	2	2,000			5	4,000
T73 (S2T)	3	3,000					3	3,000
A110 (OV-10)	1	0	2	0			3	0
T133 (C-130)			2	7,891			2	7,891
T911-FEU (DC-10)			1	11,092			1	11,092
A76 (S2T)					1	0	1	0
TOTAL	44	56,600	19	35,683	1	0	**64**	**92,283**

Note: Retardant amount is in gallons
Source: California Department of Forestry and Fire Protection Aviation Information Management System (provided by CAL FIRE San Diego)

Helicopters

Summary of Helicopter air support during Lilac Fire
Incident: 2017 CAMVU 024612 - Lilac 5

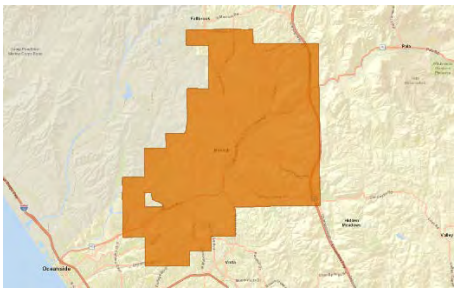
ROTOR ID	12/7/2017		12/8/2017		12/9/2017		12/10/2017		12/11/2017		12/12/2017		Grand Total	
	flight hrs	water	flight hrs	water	flight hrs	water	flight hrs	water	flight hrs	water	flight hrs	water	flight hrs	water
95B (S-64E Sikorsky Skycrane) - CWN	4.5	43,600	3.1	35,700							0.3	0	7.9	79,300
35S (S-64E Sikorsky Skycrane) - CWN	2.1	0	3.3	21,300									5.4	21,300
C10 (205A++) - SD County (Sheriff ASTREA)	4.7	9,000	3.6	5,400									8.3	14,400
C11 (205A++) - SD County (Sheriff ASTREA)	4.6	11,000	1.5	2,750									6.1	13,750
C12 (205A++) - SD County (Sheriff ASTREA)	4.0	12,126											4.0	12,126
911VR (C516 212) - FED	4.4	13,608	0.8	1,296	2.5	5,280	3.5	10,368					11.2	30,552
512TA (C528 212) - FED	2.0	3,340	1.6	4,676	1.4	3,630	4.2	15,364					9.2	27,010
262HQ (205A++) - CWN	0.5	0	1.5	3,888	2.5	7,128	1.3	4,860	1.6	3,564	0.6	0	8.0	19,440
6AS (Bell 407) - CWN	4.5	0	3.4	0	6.4	0							14.3	0
800JS (412) - SD City (Night Flying)	3.1	30,000	5.2	0									8.3	30,000
800DM (212) - SD City (Night Flying)	4.0	40,000	4.7	15,000									8.7	55,000
473CH (CH-47) - CWN			2.3	19,216							7.5	0	9.8	19,216
947CH (CH-47D) - EU FED			1.7	19,500									1.7	19,500
45917 (HT 784 S-61) - CWN			1.5	0									1.5	0
166290 (C920 UH-60 S) - T10 (Military)			3.5	1,812									3.5	1,812
167816 (C921 UH-60 S) - T10 (Military)			3.8	3,822									3.8	3,822
168944 (C960 UH-1Y) - T10 (Military)			3.4	224									3.4	224
176996 (C961 UH-1Y) - T10 (Military)			3.3	1,568									3.3	1,568
101 (UH1H) - CDF			1.1	0	1.9	6,480	1.6	5,184					4.6	11,664
4TV (AS 350 B2) - CWN			0.5	0	4.4	0	4.3	0	3.4	0	0.3	0	12.9	0
2BH (Bell 206) - CWN			1.0	0			0.6	0	0.6	0			2.2	0
407LH (Bell 407) - CWN			0.3	0	3.1	0	3.9	0	2.9	0			10.2	0
TOTAL	38.4	162,674	51.1	136,152	22.2	22,518	19.4	35,776	8.5	3,564	8.7	0	**148.3**	**360,684**

Note: Water amount is in gallons
Source: CAL FIRE San Diego, Fallbrook Helibase Report

AlertSanDiego Campaigns

AlertSanDiego is the regional emergency mass notification system, which includes listed and unlisted landline telephones and registered cell phone and email addresses. During the Lilac Fire incident, an additional 47,391 residents registered their cell phones and email addresses to receive emergency notifications. Over 524 thousand residents have registered since AlertSanDiego was launched in 2007.

Overall AlertSanDiego Notification Area – San Diego County Sheriff



	Nighttime Population*	Daytime Population*	Housing Units*	Businesses*
Total	128,249	97,925	44,051	2,652

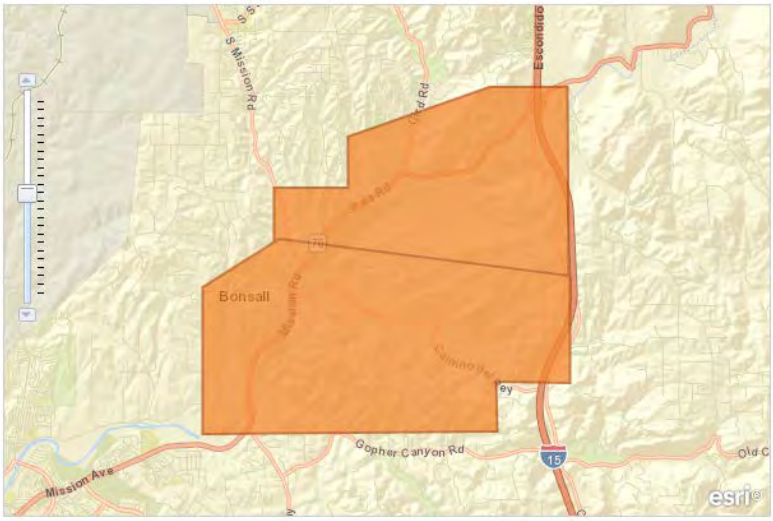
AlertSanDiego Evacuation Campaigns – San Diego County Sheriff

	Nighttime Population*	Daytime Population*	Housing Units*	Businesses*	AlertSanDiego Contacts
Campaign 1	8,311	6,984	3,299	261	3,748
Campaign 2	11,286	8,176	4,640	227	4,604
Campaign 3	11,286	8,176	4,640	227	4,604
Campaign 4	1,815	1,156	592	44	716
Campaign 5	35,848	22,842	11,382	387	11,631
Campaign 6	8,859	7,440	3,190	270	3,529
Campaign 7	9,156	6,552	3,762	166	3,513
Campaign 8	16,894	15,534	5,740	456	6,518
Campaign 9	16,894	15,534	5,740	456	6,518
Campaign 10	11,843	7,895	3,266	75	3,574
Campaign 11	22,665	14,979	7,049	237	7,259
Campaign 12	65,454	49,972	22,186	1,435	23,280
Campaign 13	18,375	16,712	6,334	494	7,109
Campaign 14	41,040	31,691	13,382	731	14,360
				Total	100,963

**Data gathered using Esri Community Analyst (Community Profile and Business Summary Reports) reflecting values from the following variables: 2017 Total Population (Nighttime) (Esri), 2017 Daytime Population (Esri), 2017 Total Housing Units (Esri), and 2017 Total (SIC01-99) Businesses. Esri provides 2017 estimates where 2017 counts are not available by using data from a variety of sources including U.S. Census data, when applicable.*

Campaign 1
Evacuation Order
7 December 2017 1:52 PM (PT)

AlertSanDiego Contacts	3,748
Nighttime Population*	8,311
Daytime Population*	6,984
Housing Units*	3,299
Businesses*	261



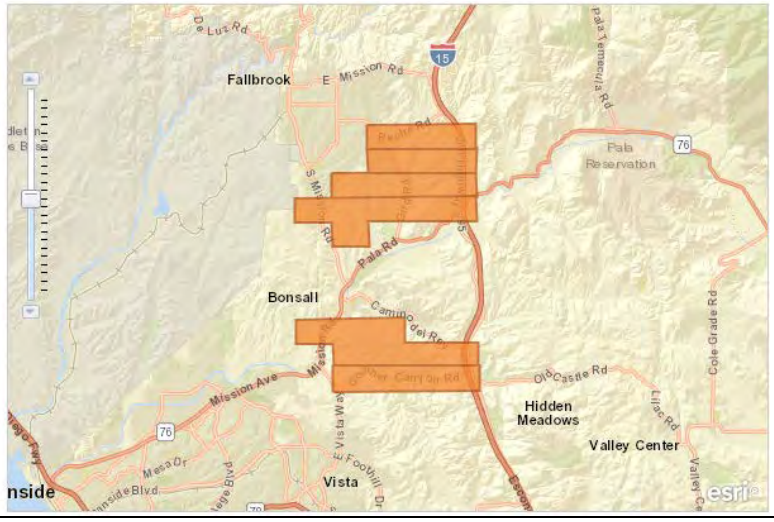
Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 1:50pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to Fallbrook High School, Pala Casino, or East Valley Community Center in Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall due to wildfire, evacuate to East Valley Community Center, Fallbrook High School, or Pala Casino. Avoid Lilac Rd, 76, and southbound 15 between Lilac and 76.

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 1:50pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to Fallbrook High School, Pala Casino, or East Valley Community Center in Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 2
Evacuation Warning
7 December 2017 2:04 PM (PT)

AlertSanDiego Contacts	4,604
Nighttime Population*	11,286
Daytime Population*	8,176
Housing Units*	4,640
Businesses*	227



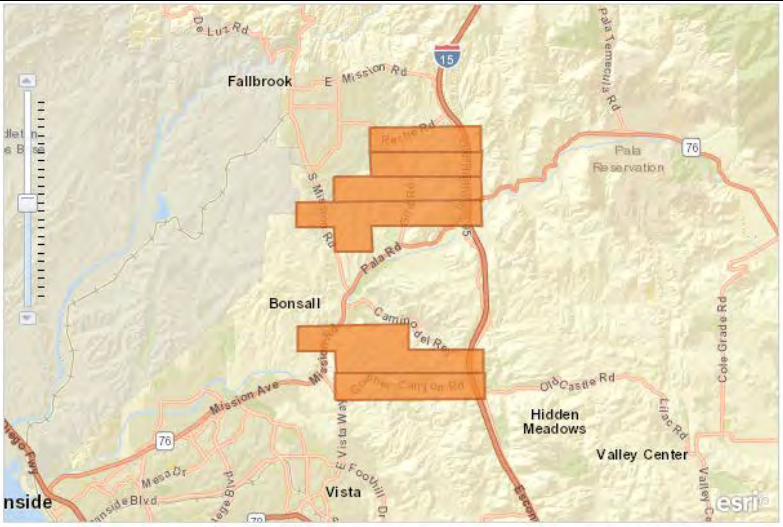
Voice Message:
This is the San Diego County Sheriff's Department with an advisory message on 12/07/17 at 2pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. Currently no evacuations are ordered for your area. You are encouraged to monitor local television and radio news stations for updates and prepare to take action if called upon to do so. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's advisory message:(TYPE OF INCIDENT) In (LOCATION), Monitor local media for updates and prepare to take action if called upon to do so.

Email Text:
ADVISORY MESSAGE FROM THE SAN DIEGO SHERIFF'S DEPARTMENT:

Campaign 3
Evacuation Order
7 December 2017 2:27 PM (PT)

AlertSanDiego Contacts	4,604
Nighttime Population*	11,286
Daytime Population*	8,176
Housing Units*	4,640
Businesses*	227



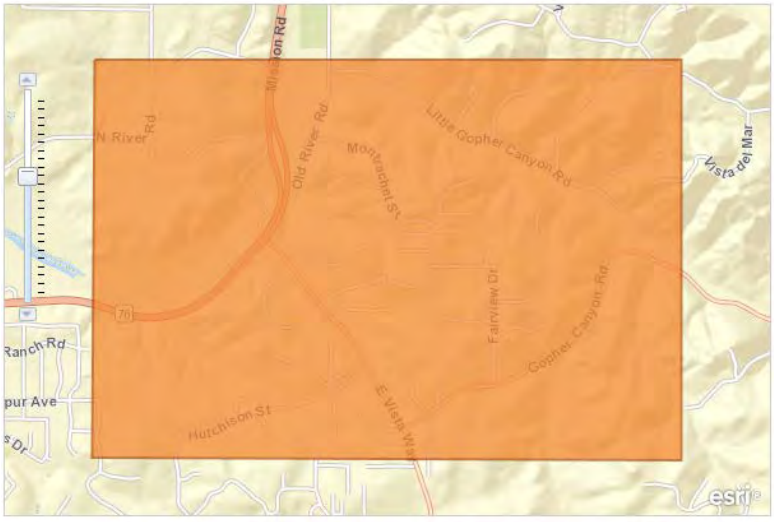
Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 2:20pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center in Escondido or Pala Casino. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall due to wildfire, evacuate to East Valley Community Center or Pala Casino, avoid Lilac Rd

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 2:20pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center in Escondido or Pala Casino. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 4
Evacuation Order
7 December 2017 3:12 PM (PT)

AlertSanDiego Contacts	716
Nighttime Population*	1,815
Daytime Population*	1,156
Housing Units*	592
Businesses*	44



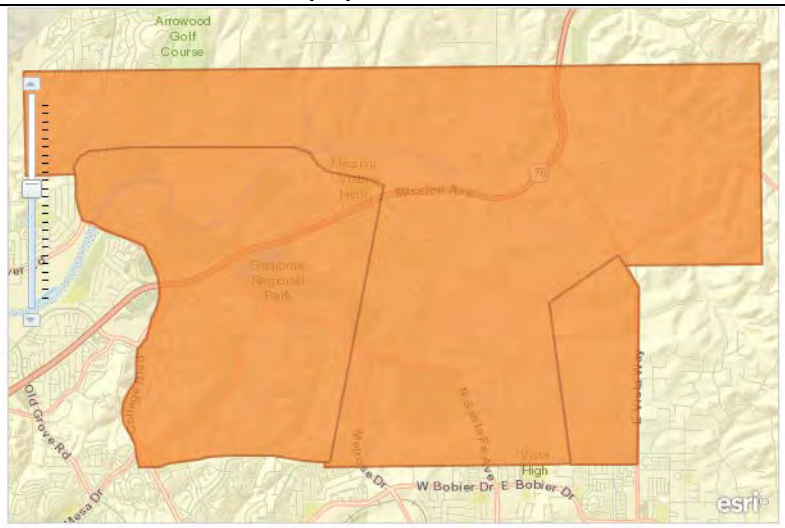
Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 5:10pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center in Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall due to wildfire, evacuation shelter at East Valley Community Center in Escondido

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 5:10pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center in Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 5
Evacuation Warning
7 December 2017 3:47 PM (PT)

AlertSanDiego Contacts	11,631
Nighttime Population*	35,848
Daytime Population*	22,842
Housing Units*	11,382
Businesses*	387



Voice Message:
This is the San Diego County Sheriff's Department with an emergency message. An evacuation warning has been issued for your area due to a wildfire burning in Bonsall. Emergency responders are addressing the situation. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued. Residents who choose to evacuate can go to East Valley Community Center at 2245 E Valley Pkwy Escondido. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

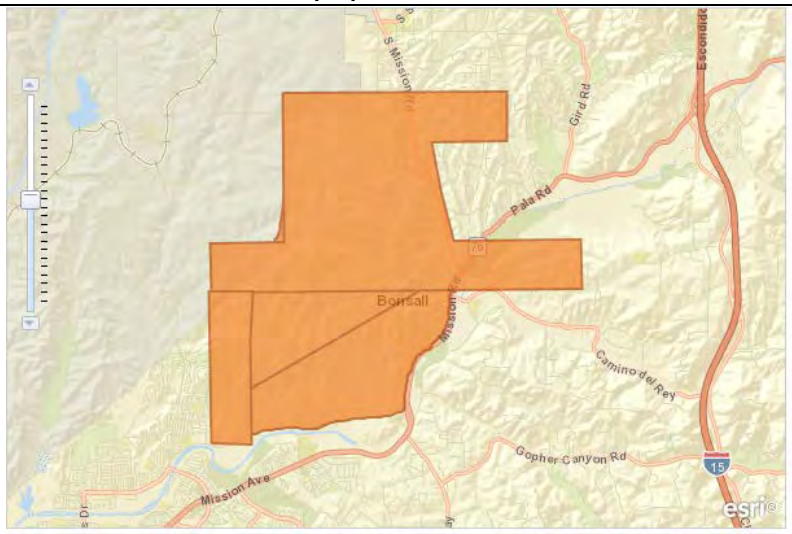
SMS Text:
SD Sheriff's is issuing an evacuation warning in your area due to wildfire, evacuation shelter at 2245 E Valley Pkwy Escondido at East Valley Community Center

Email Text:
This is the San Diego County Sheriff's Department with an emergency message. An evacuation warning has been issued for your area due to a wildfire burning in Bonsall. Emergency responders are addressing the situation. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued.

Residents who choose to evacuate can go to East Valley Community Center at 2245 E Valley Pkwy Escondido. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 6
Evacuation Order
7 December 2017 5:32 PM (PT)

AlertSanDiego Contacts	3,529
Nighttime Population*	8,859
Daytime Population*	7,440
Housing Units*	3,190
Businesses*	270



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 5:30pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Parkway Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

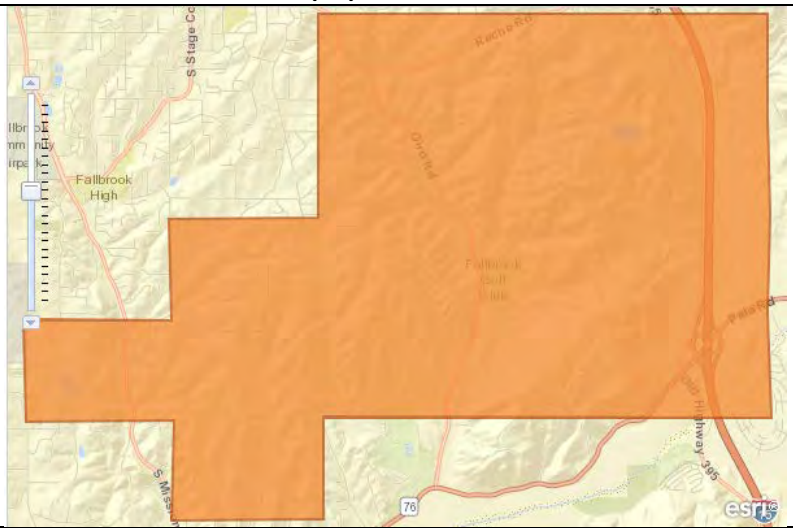
SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall area due to wildfire, evacuation shelter East Valley Community Center 2245 E valley Pkwy Escondido

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 5:30pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Parkway Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 7
Evacuation Order
7 December 2017 6:25 PM (PT)

AlertSanDiego Contacts	3,513
Nighttime Population*	9,156
Daytime Population*	6,552
Housing Units*	3,762
Businesses*	166



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 6:20pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. Please evacuate north toward E Mission the east on E Mission toward Interstate 15. All residents can evacuate to East Valley Community Center at 2245 E Valley Parkway Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

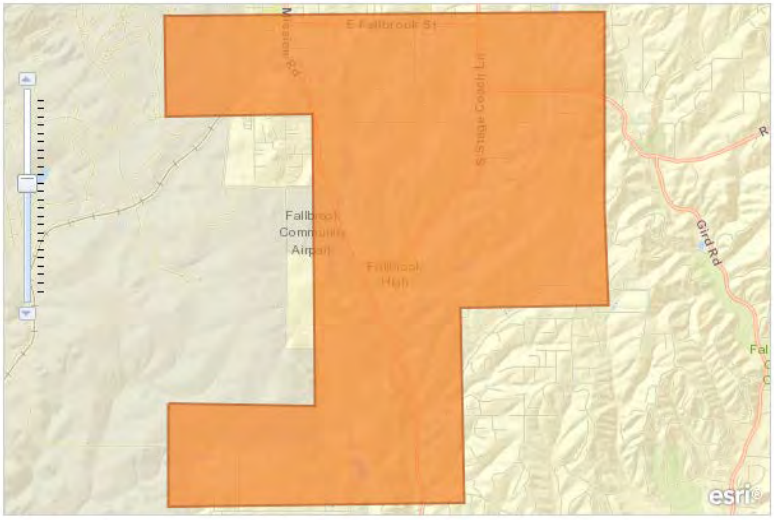
SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall due to wildfire, evacuation shelter 2245 E Valley Parkway at East Valley Community Center, travel north toward E Mission then east toward I-15

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 6:20pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. Please evacuate north toward E Mission the east on E Mission toward Interstate 15. All residents can evacuate to East Valley Community Center at 2245 E Valley Parkway Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 8
Evacuation Warning
7 December 2017 7:25 PM (PT)

AlertSanDiego Contacts	6,518
Nighttime Population*	16,894
Daytime Population*	15,534
Housing Units*	5,740
Businesses*	456



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:20pm. There is a wildfire in Bonsall area. Emergency responders are currently addressing the situation. An evacuation warning has been issued for your area. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued. Residents who choose to evacuate can go to East Valley Community Center at 2245 E Valley Pkwy Escondido via E Mission toward I-15. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's is issuing an evacuation warning in Bonsall due to wildfire, evacuation shelter East Valley Community Center at 2245 E Valley Pkwy Escondido, safe route E Mission Rd toward I-15

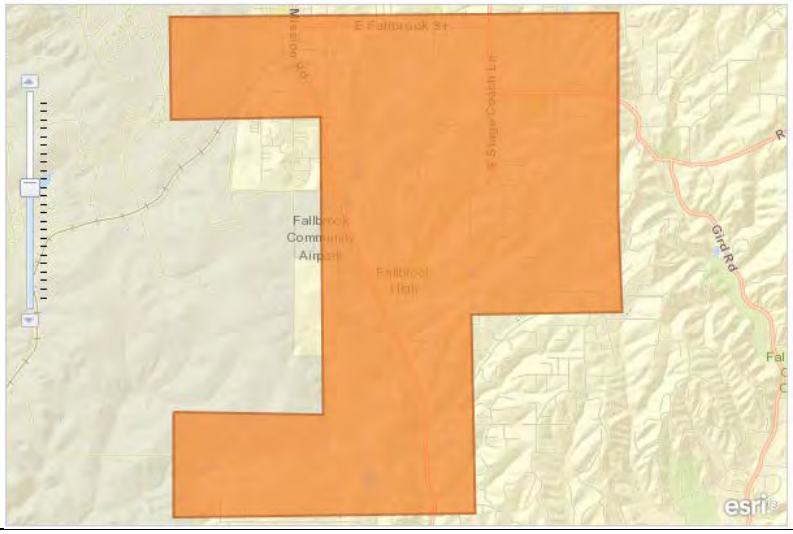
Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:20pm. There is a wildfire in Bonsall area. Emergency responders are currently addressing the situation.

An evacuation warning has been issued for your area. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued.

Residents who choose to evacuate can go to East Valley Community Center at 2245 E Valley Pkwy Escondido via E Mission toward I-15. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 9
Evacuation Order
7 December 2017 7:37 PM (PT)

AlertSanDiego Contacts	6,518
Nighttime Population*	16,894
Daytime Population*	15,534
Housing Units*	5,740
Businesses*	456



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:30pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Pkwy Escondido. The safe route is north to E Mission then east tow I-15. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

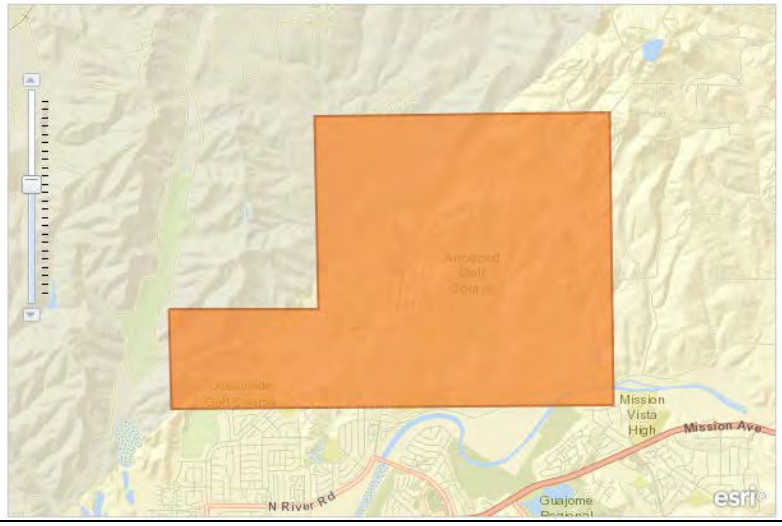
SMS Text:
SD Sheriff's is issuing an evacuation order in Bonsall due to wildfire, evacuation shelter 2245 E Valley Pkwy at East Valley Community Shelter, safe route E mission toward I-15

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:30pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Pkwy Escondido. The safe route is north to E Mission then east tow I-15. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 10
Evacuation Order
7 December 2017 7:49 PM (PT)

AlertSanDiego Contacts	3,574
Nighttime Population*	11,843
Daytime Population*	7,895
Housing Units*	3,266
Businesses*	75



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:45pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Pkwy Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

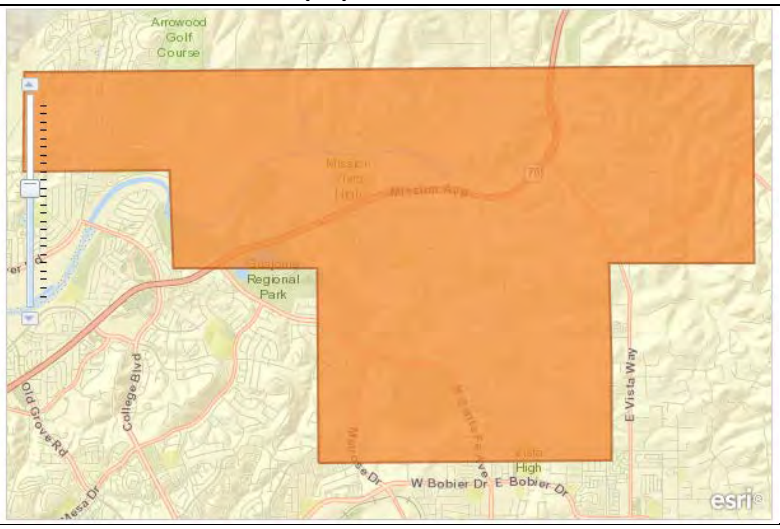
SMS Text:
SD Sheriff's is issuing an evacuation order in your area due to wildfire, evacuation point is East Valley Community Shelter at 2245 E Valley Pkwy Escondido, evacuate to the southwest toward

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 7:45pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. All residents can evacuate to East Valley Community Center at 2245 E Valley Pkwy Escondido. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 11
Evacuation Order
7 December 2017 8:18 PM (PT)

AlertSanDiego Contacts	7,259
Nighttime Population*	22,665
Daytime Population*	14,979
Housing Units*	7,049
Businesses*	237



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 8:15pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents can evacuate to Carlsbad Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

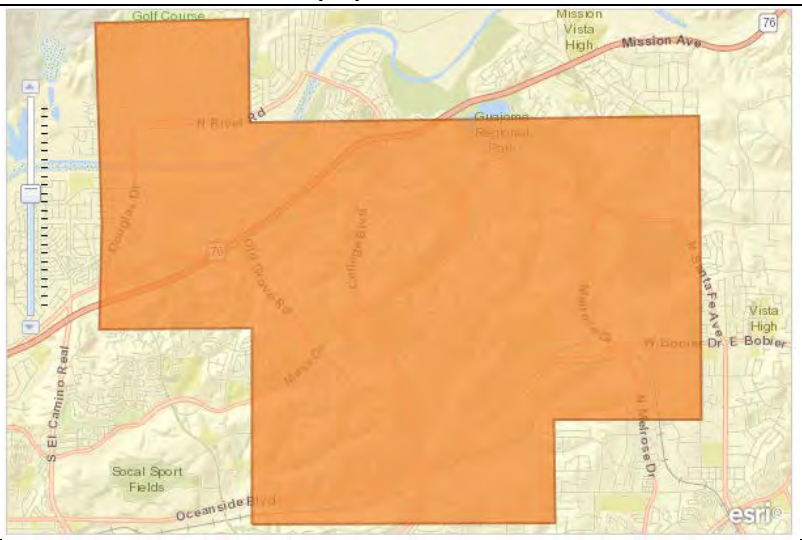
SMS Text:
SD Sheriff's is issuing an evacuation order in your area due to wildfire, evacuation point Forum Shops at 1923 Calle Barcelona Carlsbad, safe route is toward the southwest

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 8:15pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. All residents can evacuate to Carlsbad Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 12
Evacuation Warning
7 December 2017 8:30 PM (PT)

AlertSanDiego Contacts	23, 280
Nighttime Population*	65,454
Daytime Population*	49,972
Housing Units*	22,186
Businesses*	1,435



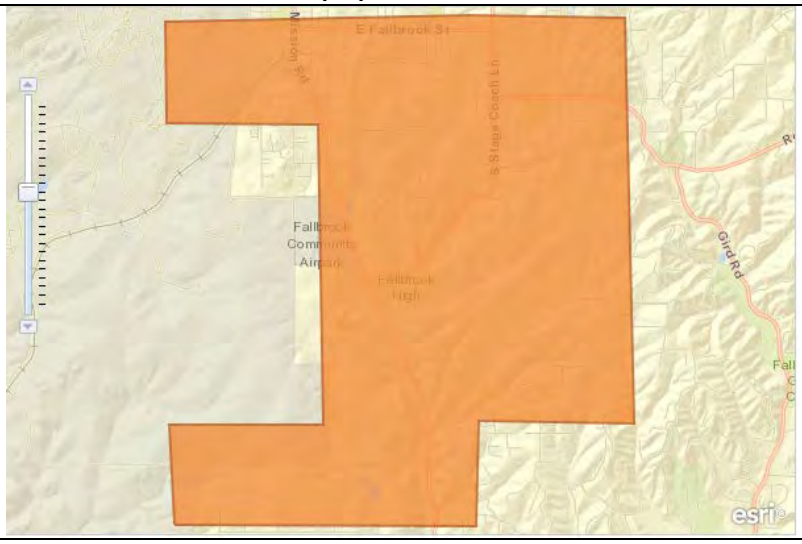
Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 8:30pm. There is a wildfire in the Bonsall area. Emergency responders are currently addressing the situation. An evacuation warning has been issued for your area. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued. Residents who choose to evacuate can go to the Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

SMS Text:
SD Sheriff's is issuing an evacuation warning in your area due to wildfire, evacuation point Forum Shops 1923 Calle Barcelona Carlsbad

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 8:30pm. There is a wildfire in the Bonsall area. Emergency responders are currently addressing the situation. An evacuation warning has been issued for your area. An evacuation warning means that evacuations are currently voluntary, however everyone should be prepared to evacuate if an evacuation order is issued. Residents who choose to evacuate can go to the Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance with evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 13
Evacuation Order
7 December 2017 9:03 PM (PT)

AlertSanDiego Contacts	7,109
Nighttime Population*	18,375
Daytime Population*	16,712
Housing Units*	6,334
Businesses*	494



Voice Message:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 9pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation. An evacuation order has been issued for your area. All residents should evacuate westbound on Ammunition through Camp Pendleton. An evacuation point has been established at the Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

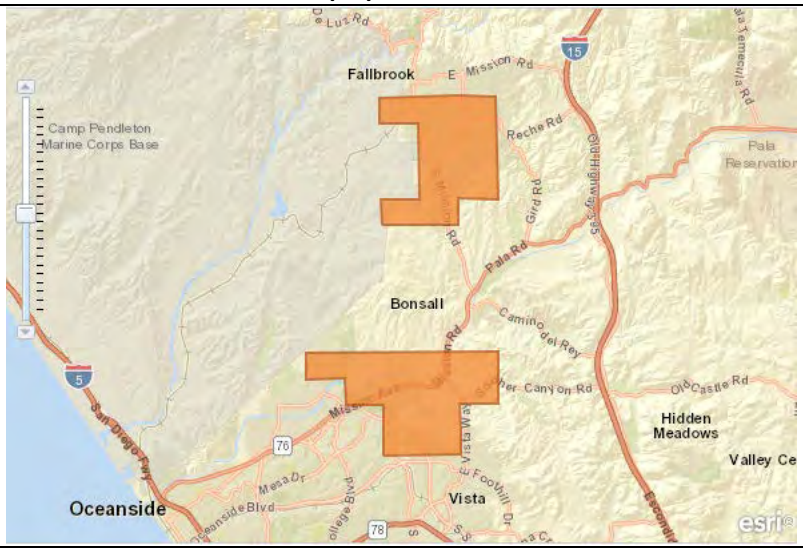
SMS Text:
SD Sheriff's is issuing an evacuation order in Fallbrook due to wildfire, evacuation point Forum Shops 1923 Calle Barcelona Carlsbad, travel west on Ammunition Rd through Camp Pendleton

Email Text:
This is the San Diego County Sheriff's Department with an emergency evacuation message on 12/7/17 at 9pm. There is a wildfire in Bonsall area. Emergency responders are addressing the situation.

An evacuation order has been issued for your area. All residents should evacuate westbound on Ammunition through Camp Pendleton. An evacuation point has been established at the Forum Shops at 1923 Calle Barcelona Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information, visit www.sdcountyemergency.com or call the San Diego Sheriff's Department non-emergency line at 858-565-5200.

Campaign 14
Update Evacuation Point
7 December 2017 10:17 PM (PT)

AlertSanDiego Contacts	14,360
Nighttime Population*	41,040
Daytime Population*	31,691
Housing Units*	13,382
Businesses*	731



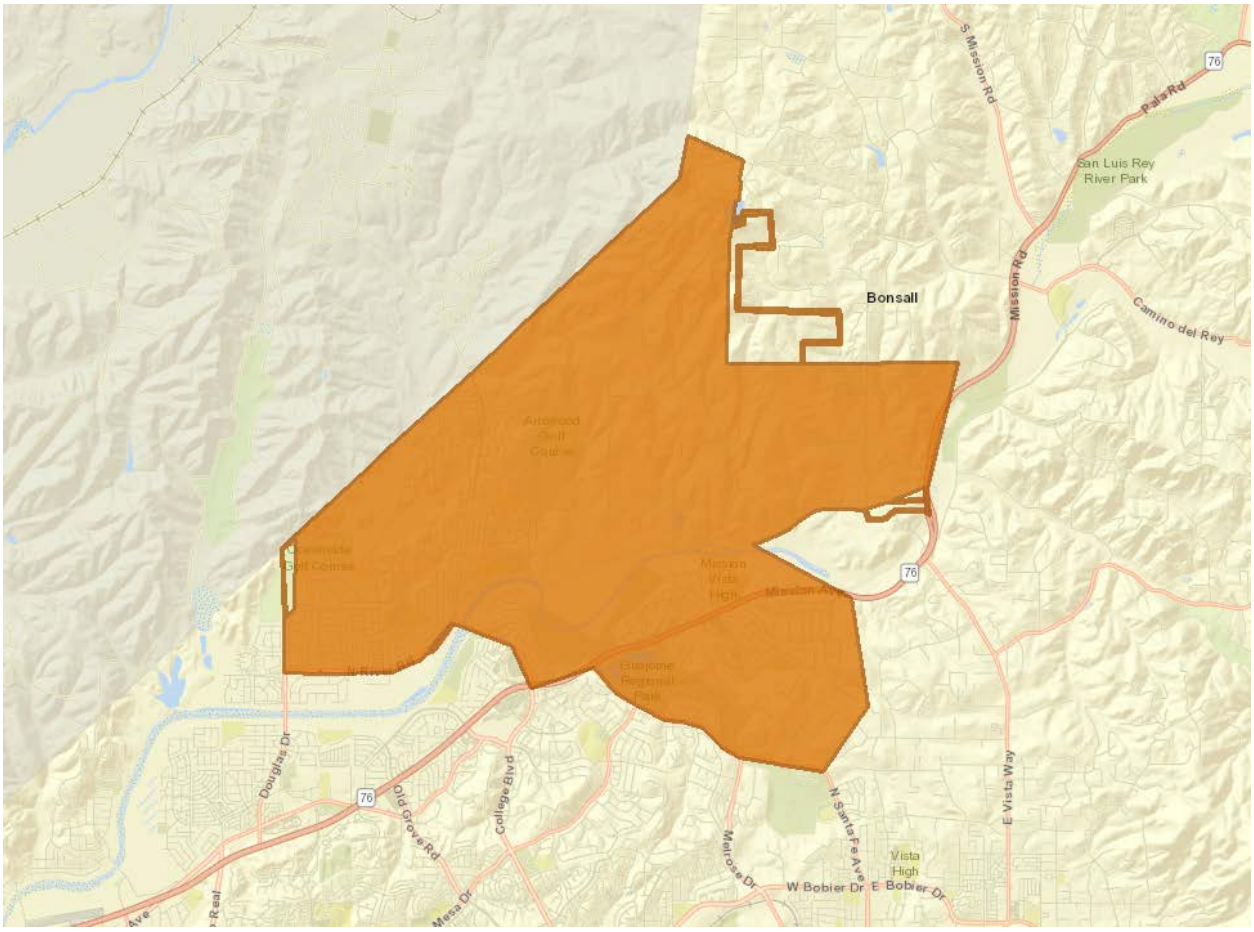
Voice Message:
This is the San Diego County Sheriff's Department with an update to the emergency evacuation message. The Forum Shops are no longer an evacuation point. Residents can now evacuate to Stagecoach Community Park located at 3420 Camino De Los Coches in Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information,
visit www.sdcountyemergency.com or call 2-1-1.

SMS Text:
SD Sheriff's Dept with an updated evacuation message. The Forum Shops are no longer an evacuation point, Residents can evacuate to Stagecoach Community Park @3420 Camino De Los Coches in Carlsbad. If you need emergency assistance in evacuation, call 9-1-1

Email Text:
This is the San Diego County Sheriff's Department with an update to the emergency evacuation message. The Forum Shops are no longer an evacuation point. Residents can now evacuate to Stagecoach Community Park located at 3420 Camino De Los Coches in Carlsbad. If you need emergency assistance in evacuation, call 9-1-1. If you need additional information,
visit www.sdcountyemergency.com or call 2-1-1.

Overall AlertSanDiego Notification Area – Oceanside Police Department

	Nighttime Population*	Daytime Population*	Housing Units*	Businesses*
Total	32,688	21,458	9,645	252

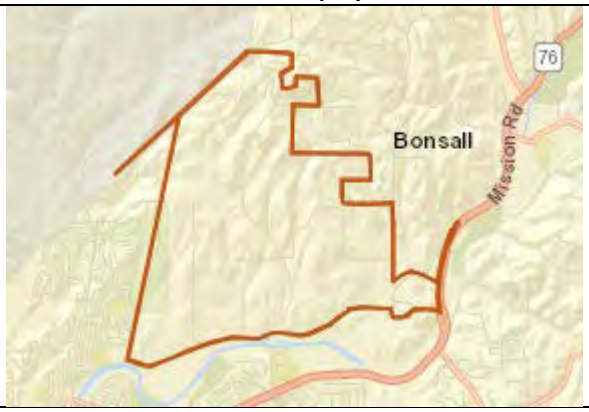


AlertSanDiego Evacuation Campaigns – Oceanside Police Department

	Nighttime Population*	Daytime Population*	Housing Units*	Businesses*	AlertSanDiego Contacts
Campaign 1	0	0	0	0	42
Campaign 2	0	0	0	0	223
Campaign 3	32,688	21,458	9,645	252	9,022

Campaign 1
Mandatory Evacuation
7 December 2017 5:49PM (PT)

AlertSanDiego Contacts	42
Nighttime Population*	0
Daytime Population*	0
Housing Units*	0
Businesses*	0

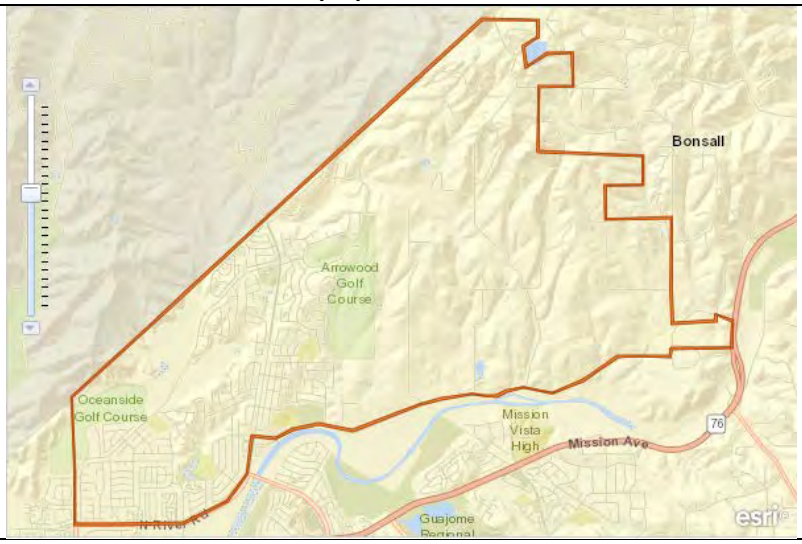


Voice Message:
The following area is now under mandatory evacuations. Everything east of Wilshire and North of N River Rd. N. River road is closed for east bound traffic but west bound is still open. Officers will be going door to door for evacuations.

SMS Text:
The following area is now under mandatory evacuations. Everything east of Wilshire and North of N River Rd. N. River road is closed for east bound traffic but west bound is still open. Officers will be going door to door for evacuations.

Campaign 2
Mandatory Evacuation
7 December 2017 7:58PM (PT)

AlertSanDiego Contacts	223
Nighttime Population*	0
Daytime Population*	0
Housing Units*	0
Businesses*	0

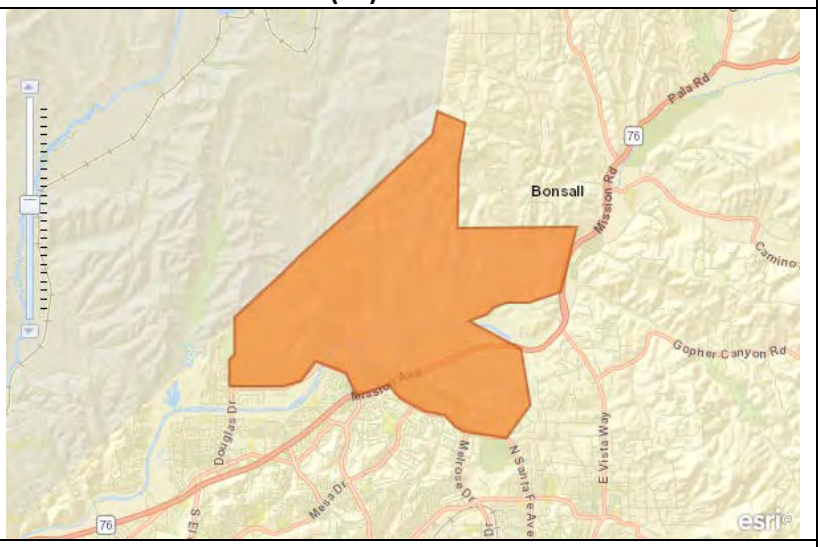


Voice Message:
The area east of Douglas to city limits and north of N River are under mandatory evacuations at this time. There is evacuation shelter at Oceanside High School at 1 Pirates Cove.

SMS Text:
The area east of Douglas to city limits and north of N River are under mandatory evacuations at this time. There is evacuation shelter at Oceanside High School at 1 Pirates Cove.

Campaign 3
Mandatory Evacuation
7 December 2017 9:19PM (PT)

AlertSanDiego Contacts	9,022
Nighttime Population*	32,688
Daytime Population*	21,458
Housing Units*	9,645
Businesses*	252



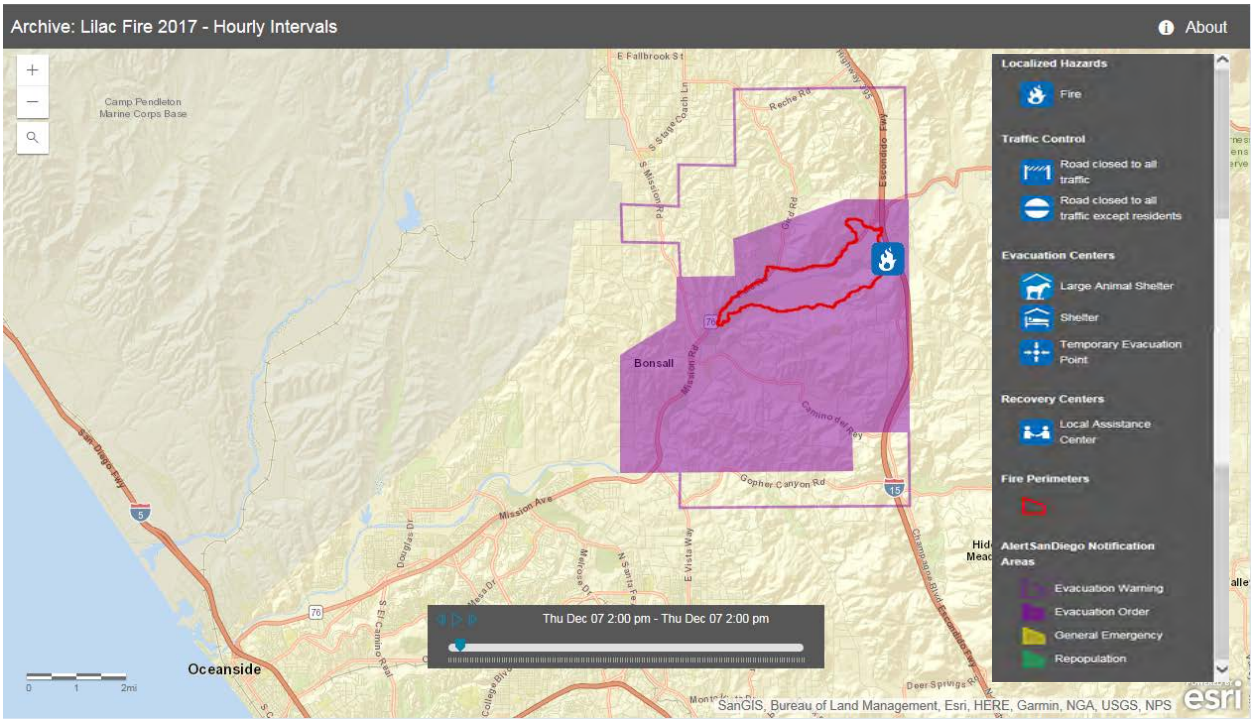
Voice Message:
Oceanside Police is issuing a mandatory evacuation for the following areas – it includes everything north of North River, East of Douglas to College, everything east of College to 76th, everything south of 76th from North Santa Fe to the city limits. Again, Oceanside Police is issuing a mandatory evacuation – everything north of North River, East of Douglas to College, east of College to the city limits, south of 76th from North Santa Fe to Oceanside Boulevard to the east city limits. Thank you.

SMS Text:
MANDATORY EVACUATIONS FOR THE FOLLOWING AREAS.EVERYTHING NORTH OF ...DOUGLAS EAST TO NORTH RIVER, COLLEGE EAST TO CITY LIMITS TO 76...ALSO SOUTH OF 76 FROM N SANTA FE TO OCEANSIDE BL AND EVERYTHING EAST.

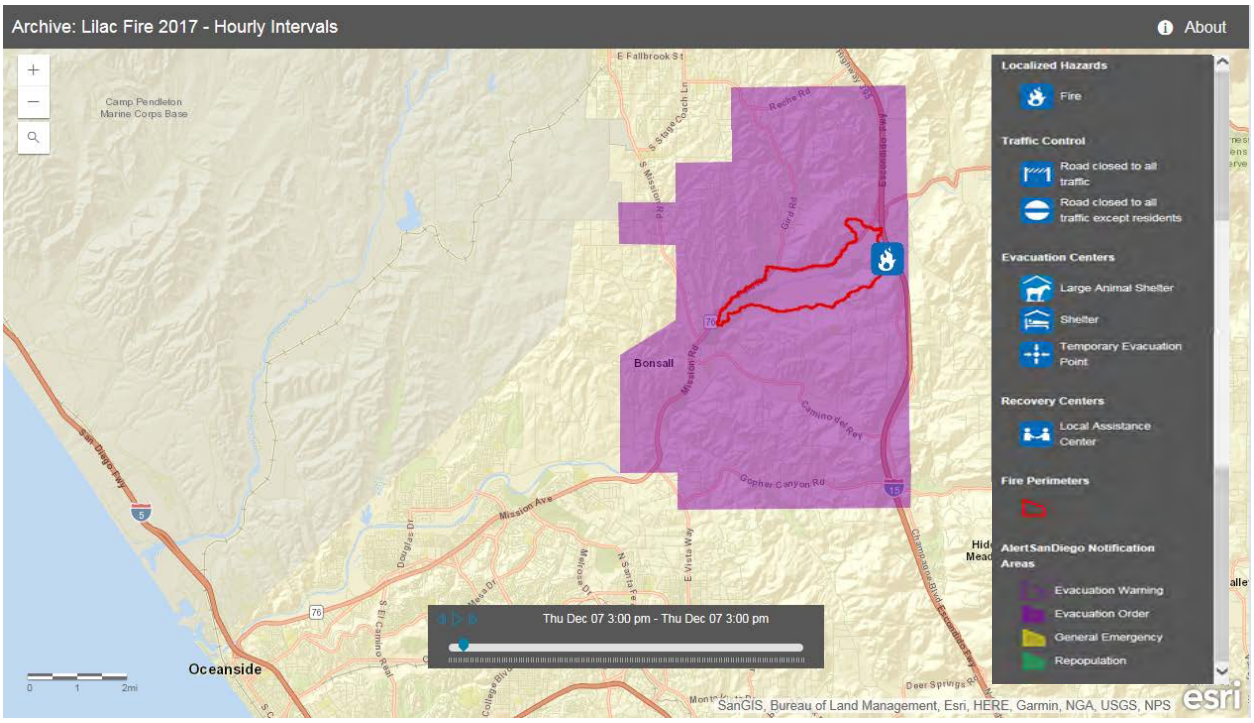
County of San Diego GIS Portal

Lilac Fire 2017 sequential maps showing changes to the Fire Perimeter as well as Evacuation Warning and Order areas on Thursday, December 7, 2017, from 2:00pm through 11:00pm.

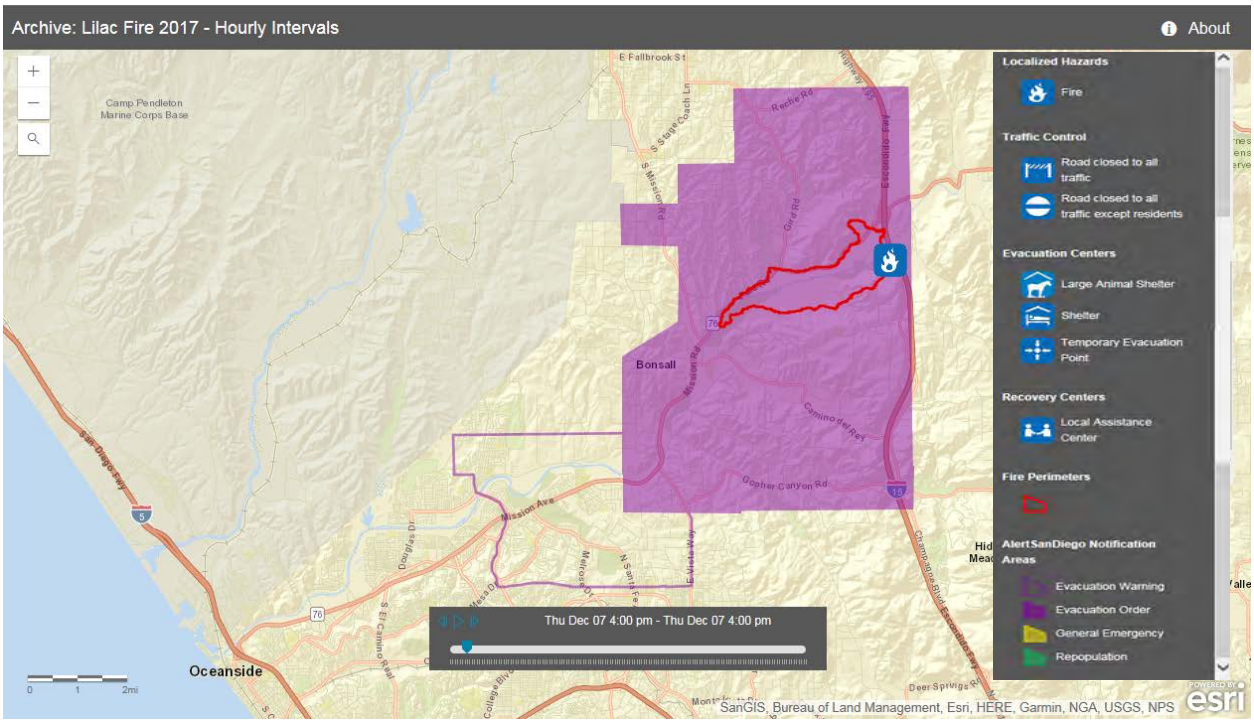
2:00pm



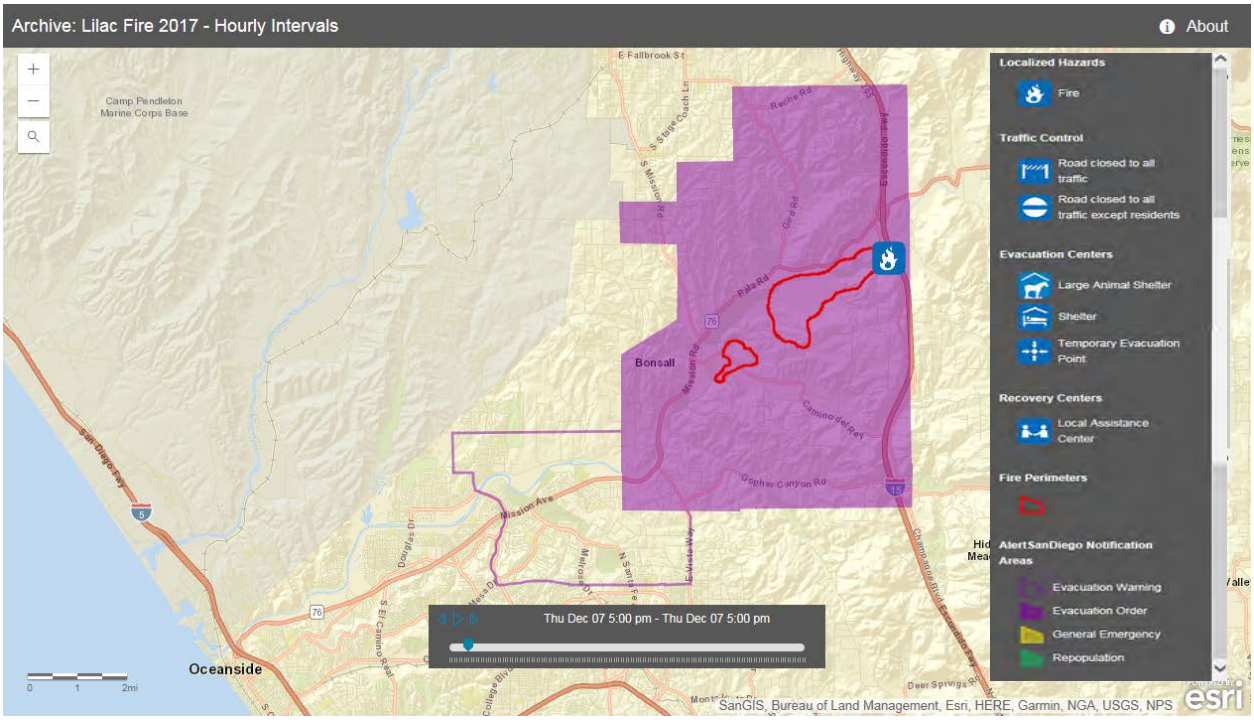
3:00pm



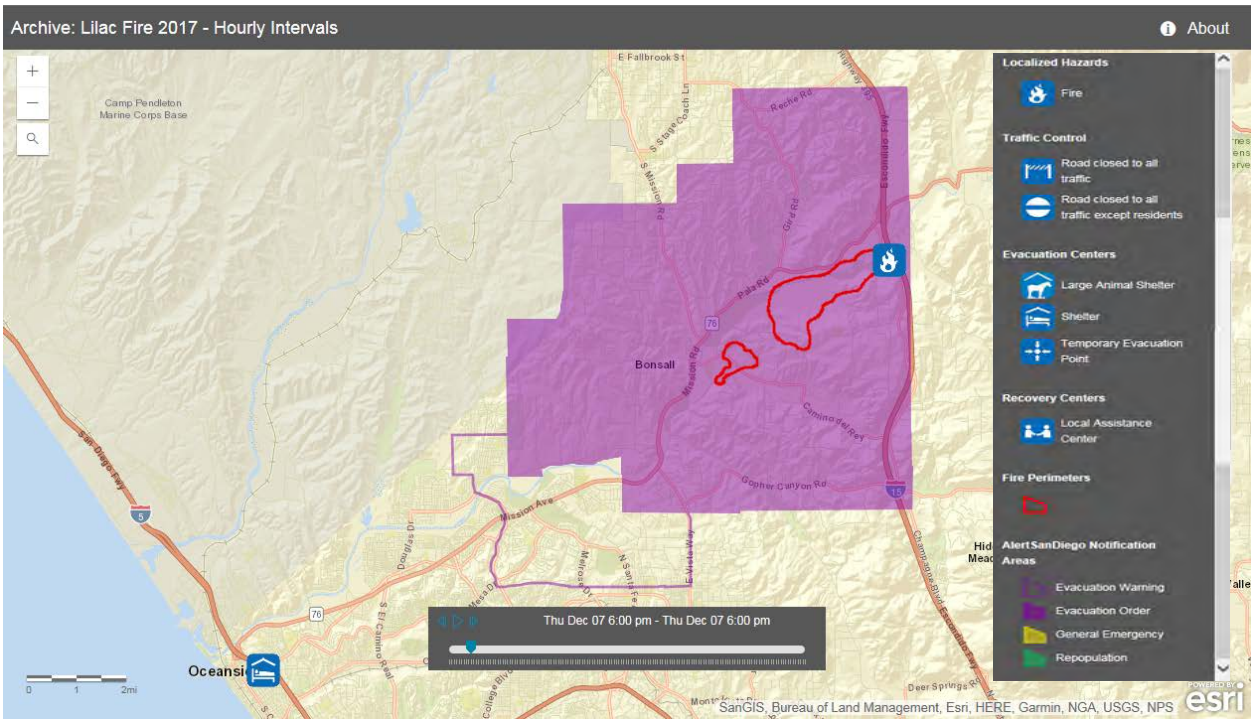
4:00pm


Archive: Lilac Fire 2017 - Hourly Intervals
About
Localized Hazards
Fire
Traffic Control
Road closed to all traffic
Road closed to all traffic except residents
Evacuation Centers
Large Animal Shelter
Shelter
Temporary Evacuation Point
Recovery Centers
Local Assistance Center
Fire Perimeters
AlertSanDiego Notification Areas
Evacuation Warning
Evacuation Order
General Emergency
Repopulation
Thu Dec 07 4:00 pm - Thu Dec 07 4:00 pm
Bonsall
Oceanside
Camp Pendleton Marine Corps Base
SanGIS, Bureau of Land Management, Esri, HERE, Garmin, NGA, USGS, NPS
esri

5:00pm

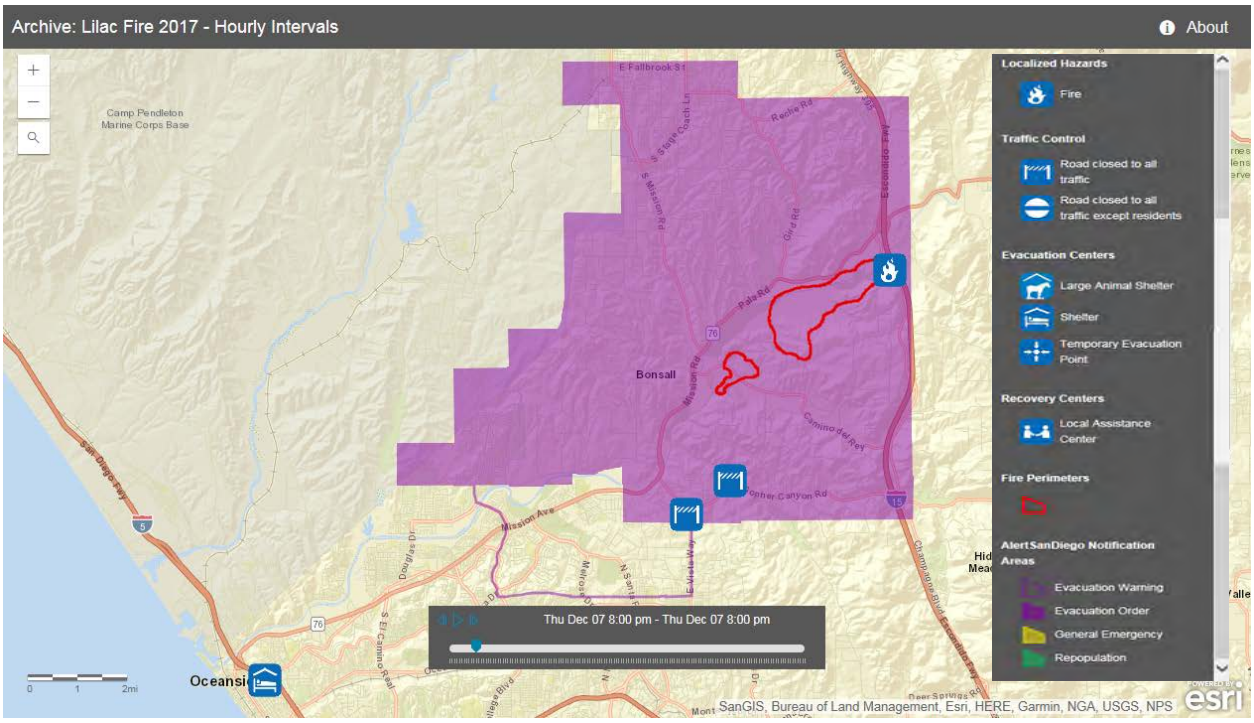

Archive: Lilac Fire 2017 - Hourly Intervals
About
Localized Hazards
Fire
Traffic Control
Road closed to all traffic
Road closed to all traffic except residents
Evacuation Centers
Large Animal Shelter
Shelter
Temporary Evacuation Point
Recovery Centers
Local Assistance Center
Fire Perimeters
AlertSanDiego Notification Areas
Evacuation Warning
Evacuation Order
General Emergency
Repopulation
Thu Dec 07 5:00 pm - Thu Dec 07 5:00 pm
Bonsall
Oceanside
Camp Pendleton Marine Corps Base
SanGIS, Bureau of Land Management, Esri, HERE, Garmin, NGA, USGS, NPS
esri

6:00pm

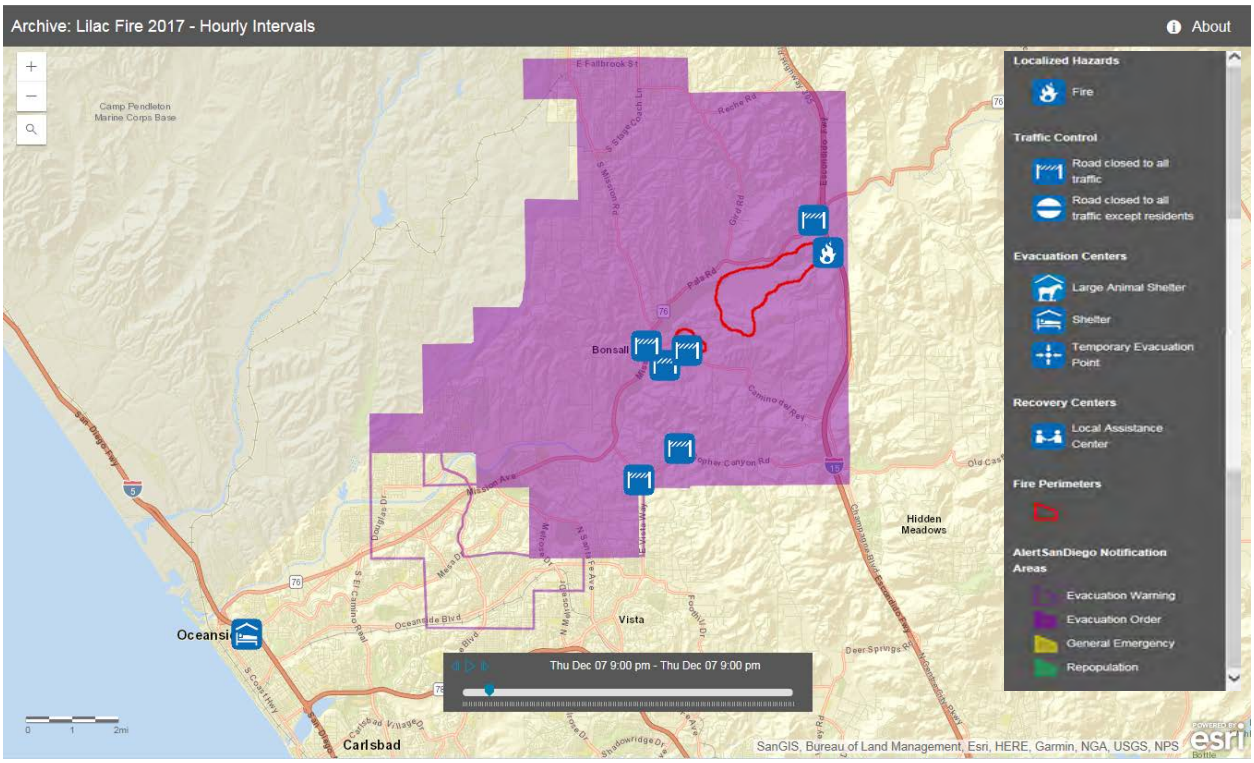


Note: No changes to fire perimeter growth or additional evacuation orders/warnings between 6:00pm and 7:00pm

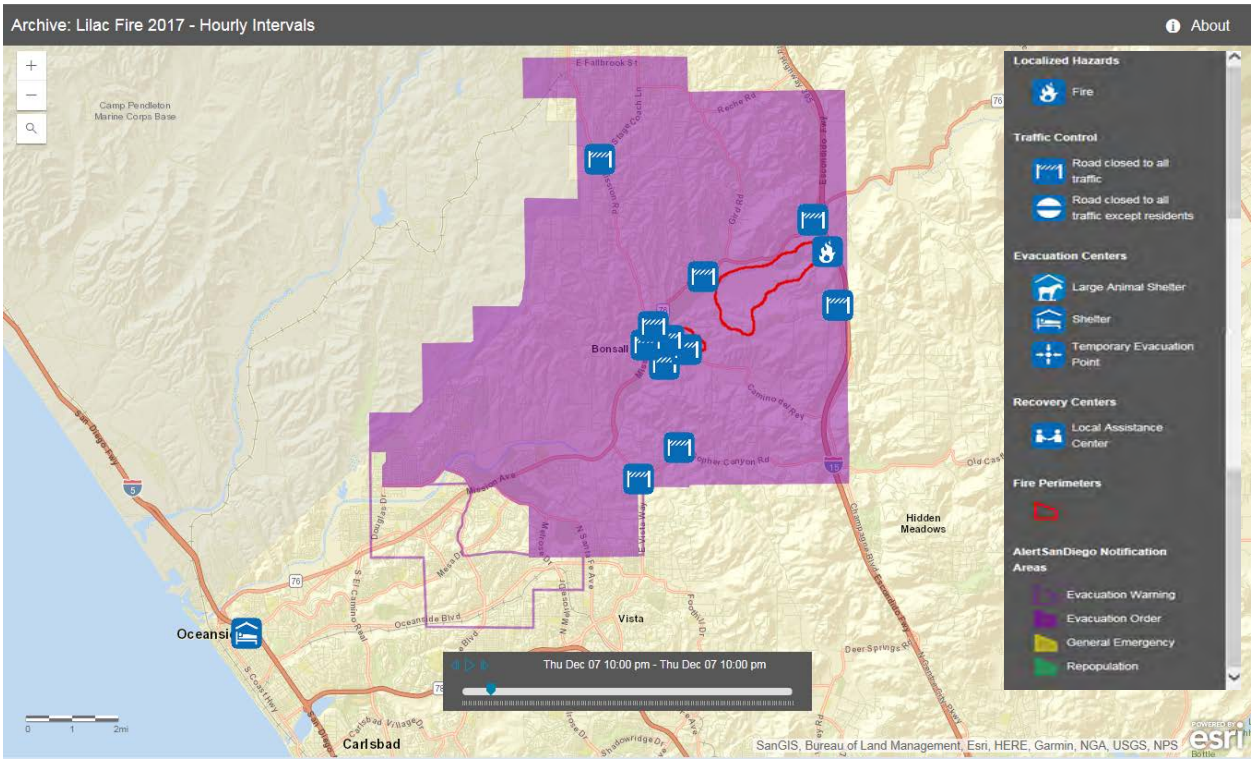
8:00pm



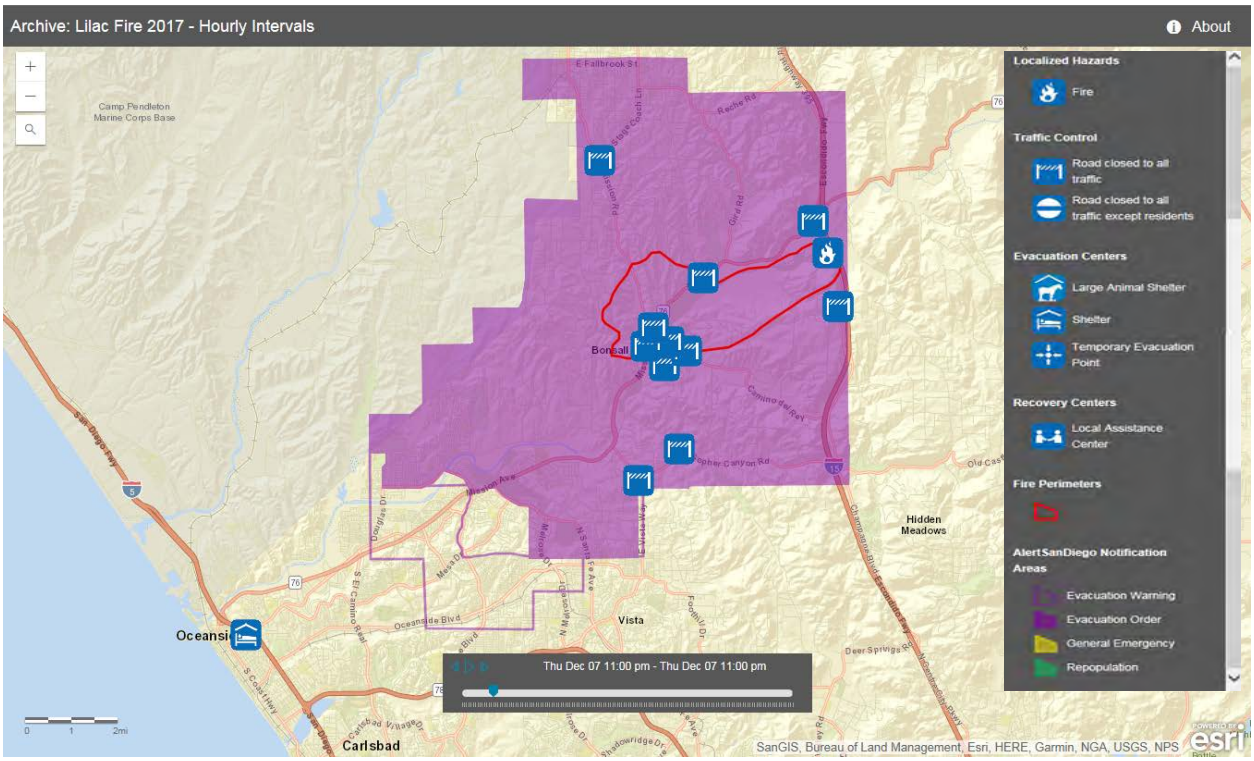
9:00pm



10:00pm

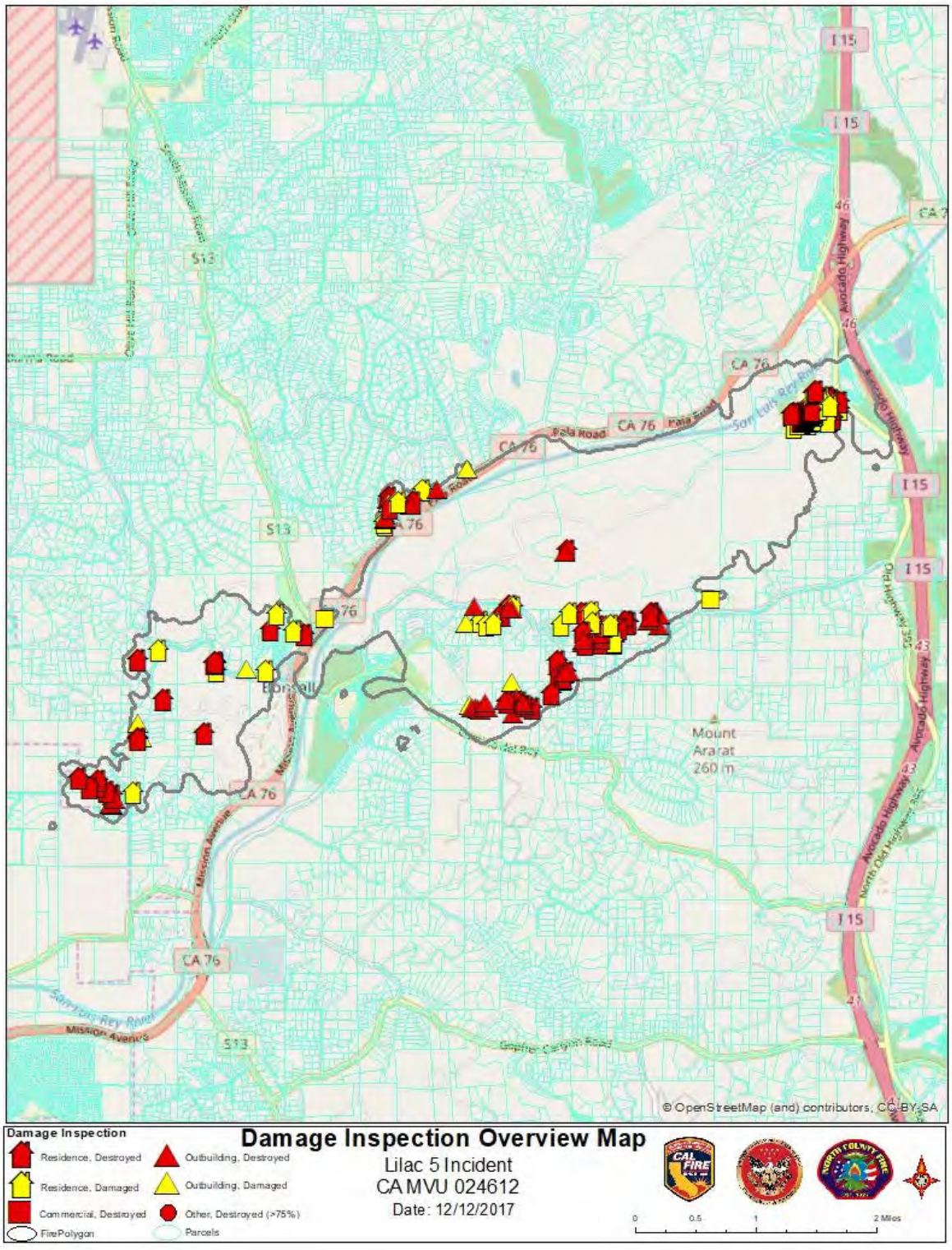


11:00pm



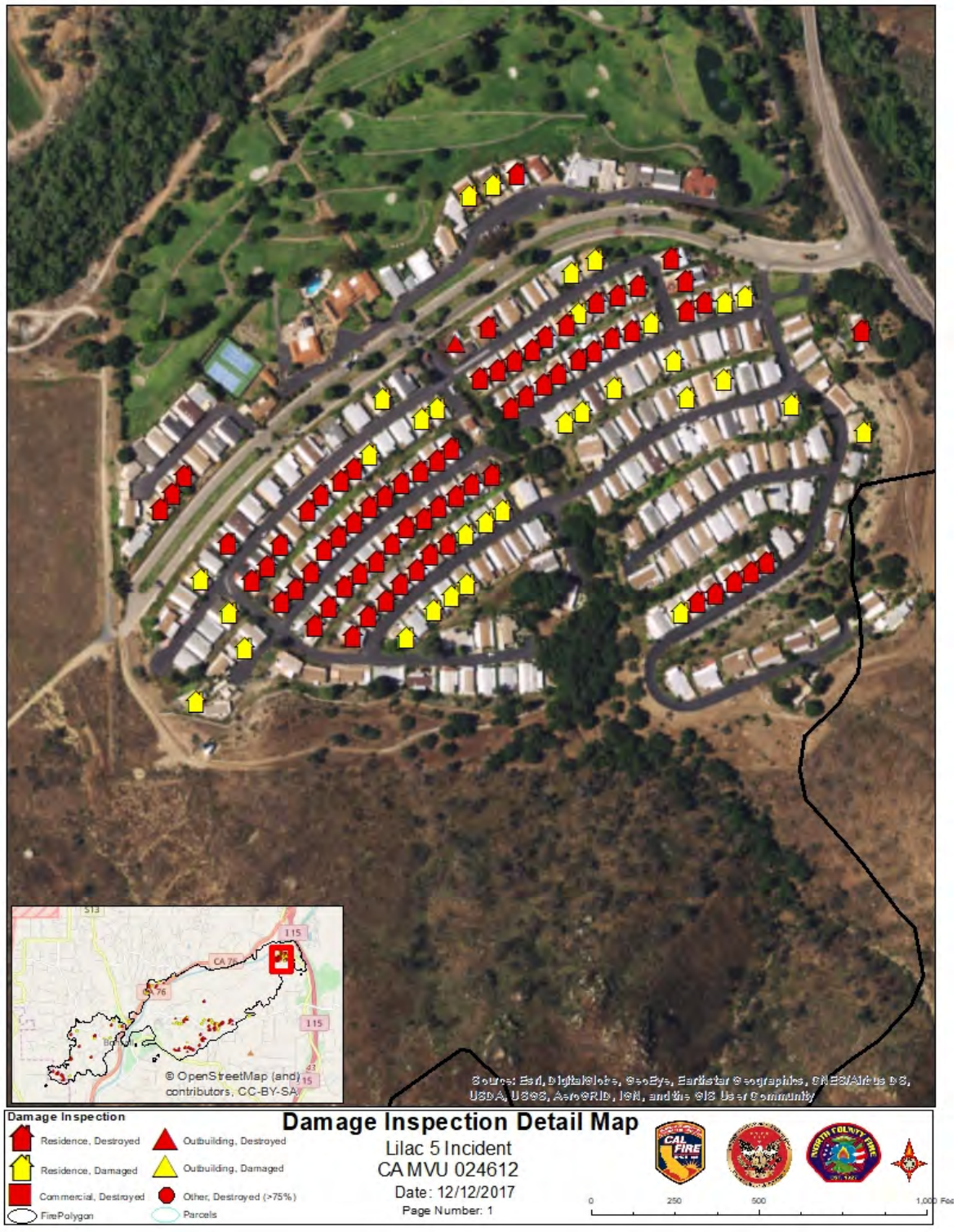
Note: No changes to fire perimeter growth or additional evacuation orders/warnings after the 11:00pm map

DAMAGE OVERVIEW MAP

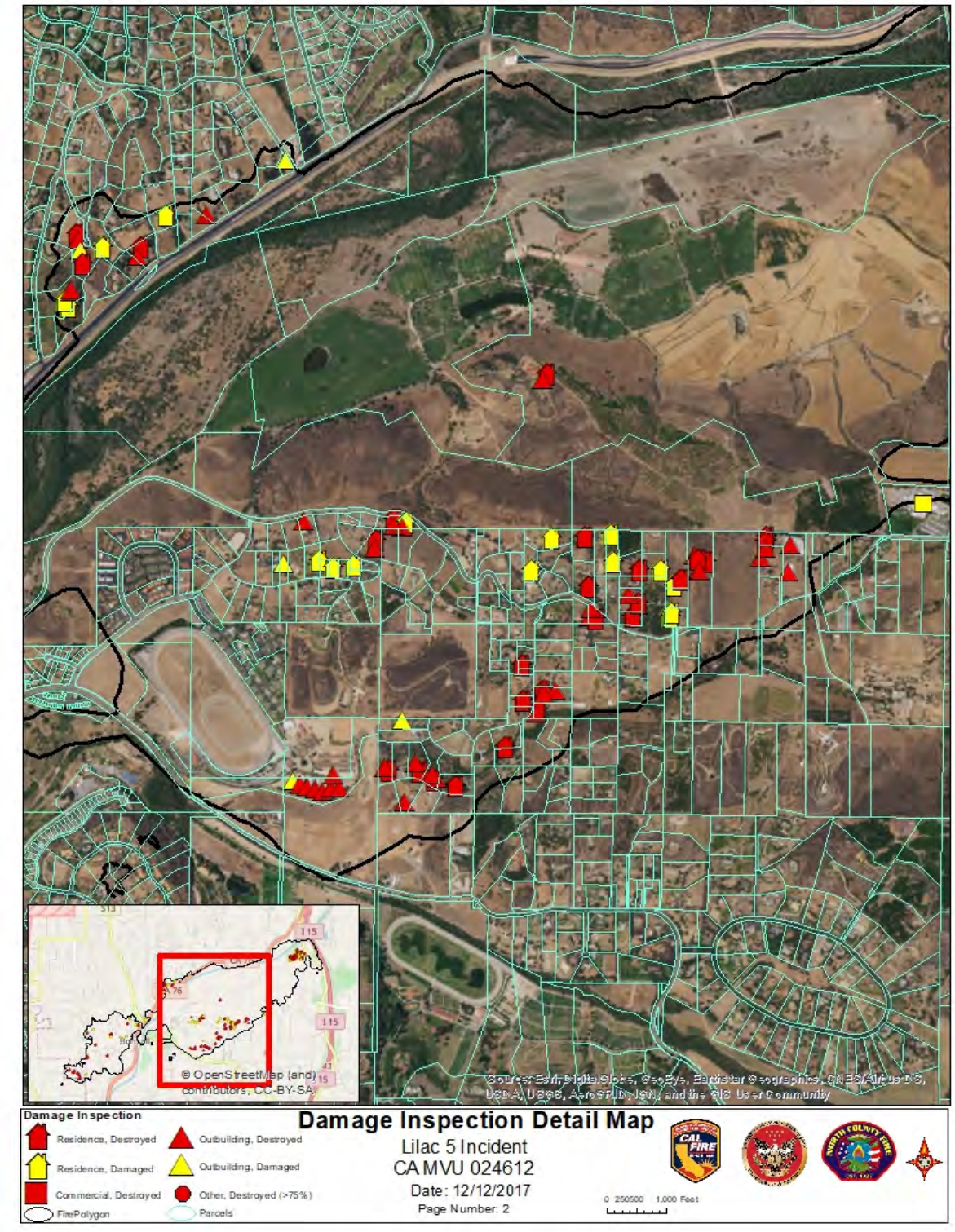


Source: Lilac Incident Damage Inspection Report - http://www.fire.ca.gov/downloads/incidents/2017/Lilac%20Final%20DINS%20Report.pdf

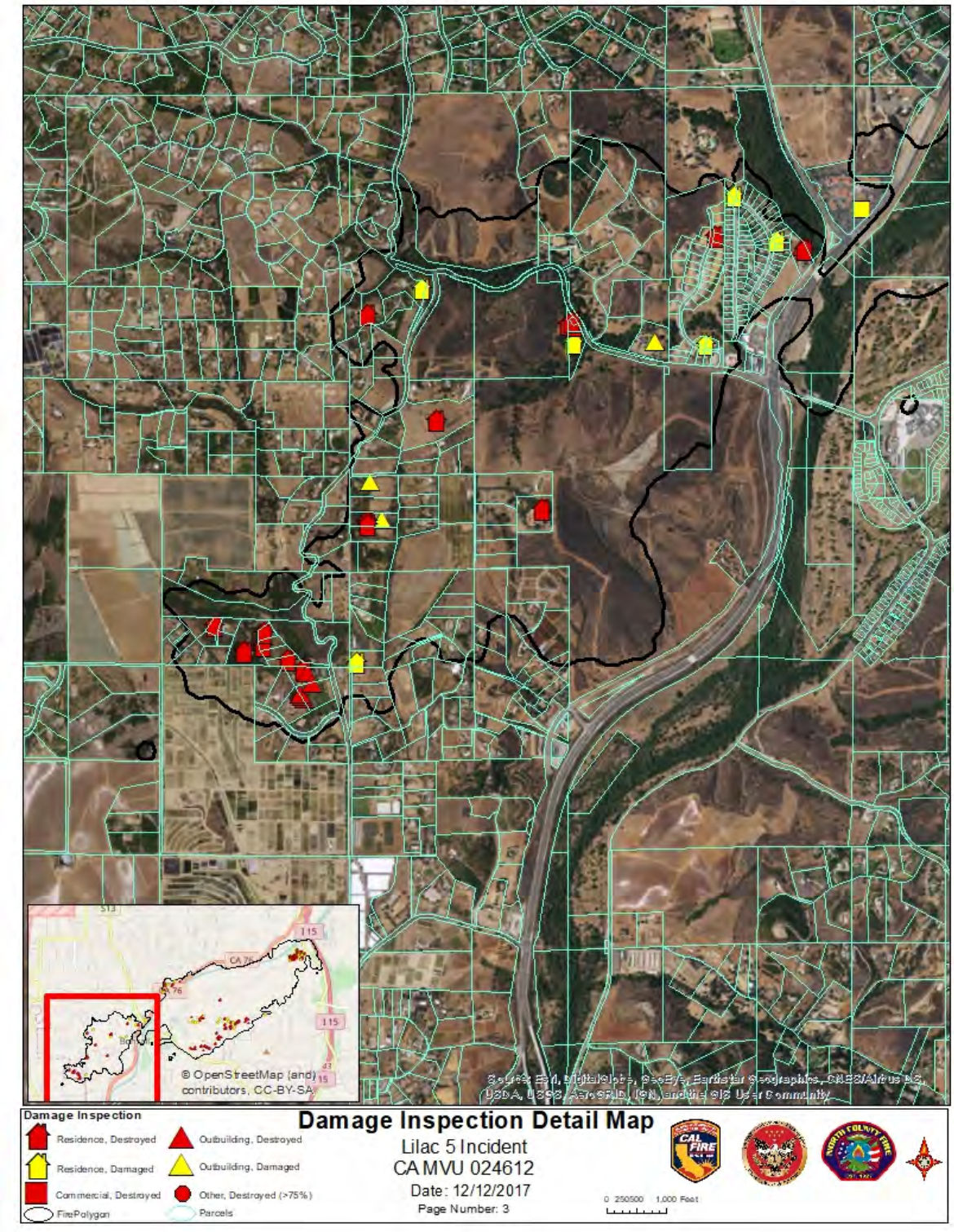
DAMAGED AREA MAP



Source: Lilac Incident Damage Inspection Report - http://www.fire.ca.gov/downloads/incidents/2017/Lilac%20Final%20DINS%20Report.pdf



Source: Lilac Incident Damage Inspection Report - http://www.fire.ca.gov/downloads/incidents/2017/Lilac%20Final%20DINS%20Report.pdf



Source: Lilac Incident Damage Inspection Report - http://www.fire.ca.gov/downloads/incidents/2017/Lilac%20Final%20DINS%20Report.pdf

PROCLAMATION OF EXISTENCE OF A COUNTY-WIDE LOCAL EMERGENCY (UNINCORPORATED AND INCORPORATED AREAS OF SAN DIEGO COUNTY) AND REQUEST TO THE GOVERNOR OF THE STATE OF CALIFORNIA TO PROCLAIM A STATE OF EMERGENCY AND TAKE OTHER SPECIFIED ACTIONS

RECITALS

R1. The California Emergency Services Act, including but not limited to Government Code section 8630 and the County of San Diego Emergency Services Organization Ordinance (Code of Regulatory Ordinances, sections 31.101 et seq.) empower the Chief Administrative Officer of the County of San Diego as Director of Emergency Services, to proclaim the existence or threatened existence of a local emergency when said County is affected or likely to be affected by a public calamity and the Board of Supervisors is not in session; and

R2. The Chief Administrative Officer of the County of San Diego as Director of Emergency Services, does hereby find that on December 7, 2017 conditions of extreme peril to the safety of persons and property have arisen within San Diego County, as a result of wildland fires that started East of Bonsall that began at approximately 11:14 a.m. and;

R3. The Board of Supervisors of the County of San Diego is not in session and cannot immediately be called into session; and

R4. The Chief Administrative Officer of the County of San Diego as Director of Emergency Services, finds that these emergency conditions are beyond the control of local resources, services, personnel, equipment and facilities; and

R5. The Chief Administrative Officer of the County of San Diego as Director of Emergency Services, finds that these emergency conditions will require additional resources, services, personnel, equipment, facilities and funding as follows (The following list does not necessarily reflect the total or final extent of the assistance that may be required. Additional assistance may be requested as the emergency evolves):

Portions of communities within the City of Vista, unincorporated parts of the County and other jurisdictions remain threatened. The fire has burned at least 150 acres, destroying multiple structures, including homes. The fire is exhibiting a rapid rate of spread. Potential needed resources may include extensive logistical and personnel assistance with firefighting due to ongoing fires throughout the state thereby straining mutual aid resources; aerial support; evacuation operations; shelters; Emergency Managers Mutual Aid; National Guard troops; Local Assistance Centers; debris removal

that poses immediate threat to public health and safety; and smoke damage. We are requesting consideration for a U.S. Small Business Administration Disaster Declaration for Individual Assistance.

R6. This Proclamation of Local Emergency will be ratified by the Board of Supervisors pursuant to law.

PROCLAMATIONS AND ORDERS

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND ORDERED by the Chief Administrative Officer of the County of San Diego as Director of Emergency Services, as follows:

1. That a local emergency exists throughout San Diego County pursuant to Government Code section 8630 and as defined by Government Code section 8558 and shall be deemed to continue to exist subject to ratification, review and termination by the Board of Supervisors pursuant to Government Code section 8630.

2. That during the existence of said local emergency the powers, functions, and duties of the emergency organization of this county shall be those prescribed by State law including but not limited to Government Code section 8634, County ordinances and resolutions, and the current Emergency Services Agreement and Operational Area Emergency Plan.

3. That a copy of this Proclamation be forwarded to the Director of the California Governor's Office of Emergency Services ("Director Cal OES") requesting that Director Cal OES find this Proclamation acceptable in accordance with State law and forward this Proclamation to the Governor of the State of California for consideration and action on San Diego County's requests that:

3.1 The Governor proclaim a State of Emergency in San Diego County.

3.2 The Governor suspend those statutes, regulations, rules and orders that may hinder response and recovery efforts.

3.3 The Governor order that recovery assistance be made available to San Diego County under the California Disaster Assistance Act.

3.4 The Governor order that the State expedite access to Federal resources and any other appropriate federal disaster relief programs for San Diego County.

3.5 The Governor request a Presidential Declaration of a Major Disaster for San Diego County and that the President award any and all appropriate Federal assistance.

4. The Director of the County Office of Emergency Services shall continue to assess the local emergency and, as emergency response and recovery efforts warrant, send to Director Cal OES any additional requests that the Governor suspend further statutes, rules and regulations pursuant to Gov Code sec 8571, and that State and Federal assistance be provided to San Diego County.

5. Helen Robbins-Meyer, Chief Administrative Officer, or her representative is hereby designated as the authorized representative of the County of San Diego for the purpose of receipt, processing, and coordination of all inquiries and requirements necessary to obtain available state and federal assistance.

COUNTY OF SAN DIEGO

Date/Time:
12/7/2017 1:26 PM

By:

Helen Robbins-Meyer,
Chief Administrative Officer and
Director of Emergency Services

http://www.readysandiego.org/

*ReadySanDiego.org was designed by the **San Diego County Office of Emergency Services** in conjunction with the **Homeland Security Ready.gov** national public service advertising campaign. The **Ready Campaign** is designed to educate and empower Americans to prepare for and respond to emergencies, including natural disasters and potential terrorist attacks.*

AlertSanDiego

http://www.readysandiego.org/alertsandiego/

A regional notification system used to send telephone notifications to residents and businesses within San Diego County impacted by, or in danger of being impacted by, an emergency or disaster. The system sends information on the event and/or actions (such as evacuation, shelter in place, gas leak, missing person, etc.) individuals are being to take. Because the system uses the 9-1-1 database, only landline numbers are in the system. If you have a Voice over IP (VoIP) or cellular telephone and would like to be notified over that device, or if you would like an email notification, you must register those telephone numbers and/or email address for use by the system.

SD Emergency App

http://www.readysandiego.org/SDEmergencyApp/

The County of San Diego Office of Emergency Services (OES) created the SD Emergency App to better prepare and inform San Diego County residents and visitors about disasters. With SD Emergency, the tools you need to plan, prepare, and respond in an emergency are right at your fingertips.

Family Disaster Plan and Personal Survival Guide http://www.readysandiego.org/Resources/Family-Disaster-Plan-English.pdf

The Family Disaster Plan and Personal Survival Guide was developed by the San Diego County Office of Emergency Services to help families be prepared in the event of a disaster. The Family Disaster Plan is a template and guide that will help you prepare for and survive a disaster.

Maps

http://www.readysandiego.org/maps/

Includes the following: Emergency Map, Know Your Hazards Tool, Wildfire Hazard Map Tool, and Adverse Weather Map

http://www.readysandiego.org/alertsandiego/

AlertSanDiego

Register Now | Questions: alertsd@sdcounty.ca.gov

AlertSanDiego is for registering your cell phone number, VoIP phone number, and email address only. Listed and unlisted landline phone numbers are already included in the database and do not need to be registered.

The County of San Diego, in partnership with Blackboard Connect Inc., has instituted a regional notification system that will be able to send telephone notifications to residents and businesses within San Diego County impacted by, or in danger of being impacted by, an emergency or disaster. This system, called AlertSanDiego, will be used by emergency response personnel to notify those homes and businesses at risk with information on the event and/or actions (such as evacuation, shelter in place, gas leak, missing person, etc.) we are asking them to take. The system utilizes the region's 9-1-1 database, provided by the local telephone company(ies), and thus is able to contact landline telephones whether listed or unlisted. It is TTY/TDD capable.

Because the system uses the 9-1-1 database, only landline numbers are in the system. If you have a Voice over IP (VoIP) or cellular telephone and would like to be notified over that device, or if you would like an email notification, you must register those telephone numbers and/or email address for use by the system.

AlertSanDiego is now available in accessible **American Sign Language (ASL)**.

Accessible AlertSanDiego for **American Sign Language (ASL)** provides emergency notifications to residents of San Diego County who are **deaf, blind, hard of hearing, and deaf/blind** before, during, and after a disaster.

Emergency notifications are available to internet and video capable devices, such as computers, cell phones, smart phones, tablet computers, and wireless Braille readers. These alerts are offered in **American Sign Language (ASL)** video with English voice and text.

Select the Accessible Option during registration to receive AlertSanDiego notifications in **American Sign Language (ASL)**.

Please contact us (alertsd@sdcounty.ca.gov) or view the Frequently Asked Questions for more information.

http://www.readysandiego.org/wildfire/

ReadySanDiego | SDCountyEmergency | SDCountyRecovery

ReadySanDiego
Prepare. Plan. Stay Informed.

Home | AlertSanDiego | SD Emergency App | Family | Kids | Pets | Business | Schools | Faith-Based | Maps | Training | English

Home / Wildfire

Wildfire

100 Feet of Defensible Space is the Law

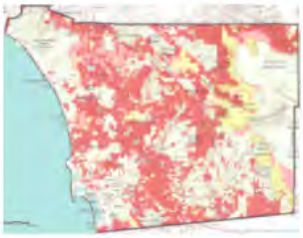
State law requires that residents treat 100 feet of defensible space around their homes. This includes such steps as mowing and properly maintaining lawn and weeds, pruning or removing ignitable trees and shrubs, stacking firewood away from the home and making sure the home's address is visible to emergency vehicles.

Creating defensible space protects a home while providing a safe area for firefighters.

- **Creating Defensible Space**
- **Defensible Space Information Flier (1 MB)**
- **Creating and Maintaining Defensible Space in Drought Conditions (560 KB)**
- **Plant Fire-Resistant Vegetation**

Wildfire Hazard Map

In San Diego County, wildfires are a major hazard to our communities. Use this tool to discover the level of wildfire hazard in your area and learn how to reduce your risk.



- **Wildfire Hazard Map Tool**

Before the Threat DVD

In 2009, the San Diego County Office of Emergency Services in partnership with the San Diego County Fire Chiefs Association and Farmers Insurance Group launched an unprecedented regionwide fire preparedness campaign. **Learn more**

Will you be prepared for the next wildfire?

In San Diego County, wildfires, both naturally occurring and human caused, are a major hazard to our communities.

San Diego County residents are urged to take steps now to assess their wildfire risk, safeguard their homes and prepare for the next firestorm.

You not only increase the safety of your property, but more importantly, you increase the safety of your family.

Be Ready. Take personal responsibility and prepare long before the threat of a wildland fire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home with fire-safe construction measures. Assemble emergency supplies and belongings in a safe place, using the **Family Disaster Plan** as a guide. Plan escape routes and make sure all those residing within the home know the plan of action.

Get Set. Be prepared. Pack your emergency items. Stay aware of the latest news and information on the fire from local media, your local fire department and public safety. Visit **SDCountyEmergency.com** and install the free **SD Emergency** app.

Go! Act early. Follow your personal wildland fire action plan. Do not wait to be advised to leave if there is a possible threat to your home or evacuation route. Leave early enough to avoid being caught in fire, smoke or road congestion. If you are advised to leave by local authorities, do not hesitate! Doing so will not only support your safety, but will allow firefighters to best maneuver resources to combat the fire.

- **Wildfire Preparedness Guide**
- **Guia de preparacion para incendios**

San Diego County Emergency Site

http://www.sdcountyemergency.com/

*This site is the official source of information from the **County of San Diego** during a large-scale emergency.*

Disaster Information Updates

http://www.sdcountyemergency.com/updates/

News Updates intended for regional emergencies that pose significant threat to large numbers of people and/or property. Check media and local fire and/or law enforcement for information about smaller, localized events.

Twitter Feeds

http://www.sdcountyemergency.com/

A compilation of Twitter feeds that may provide important and useful updates during an emergency event. Included are views and links to the following feeds: County of San Diego, CAL FIRE, CAL FIRE San Diego, and a "More Feeds" view that includes the National Weather Service for San Diego, Caltrans San Diego, San Diego Police Department, Camp Pendleton, San Diego County Department of Public Works, and Cleveland National Forest

Emergency Map

http://www.sdcountyemergency.com/maps/

County of San Diego publicly available GIS information about emergencies in the San Diego Region. This map has a combination of information from live feed sensors, USGS hazard information, and data that the County of San Diego collects. This map is directly connected to the County of San Diego GIS Emergency Site data feed so that fire perimeter information, reverse 911 info, and general emergency information can be displayed.

Shelters

http://www.sdcountyemergency.com/shelters/

An interactive map and list of shelters open in the San Diego Region during an emergency. The map has search by distance capabilities to assist with locating shelters available near a specific address.

Local Assistance Centers (LACs)

http://www.sdcountyemergency.com/local-assistance-centers-map/

An interactive map and list of Local Assistance Centers open in the San Diego Region in response to a regional emergency. The map has search by distance capabilities to assist with locating centers available near a specific address.

https://www.sdcountyrecovery.com/

San Diego County Recovery *works to maximize disaster assistance to eligible public and private entities and residents through various state and federal disaster assistance programs. Following an emergency or disaster, additional information and resources will be available throughout this website, including information on Assistance, Returning Home, Cleanup, Insurance, Rebuilding, and Replacing Documents.*

December 2017 Fire Recovery Resources

https://www.sdcountyrecovery.com/events/december-2017-fires/

In addition to the detailed recovery information already available on this site, a webpage was developed to provide a quick view of recovery information and resources available for individuals needing assistance due to the Lilac Fire.

Recovery Overviews and General Resources

- **2-1-1 San Diego**
- **Fire Recovery & Assistance Services**
- **Recovery Services**
- **CAL FIRE: Ready for Wildfire**

Rebuilding and Permit Processing in the Unincorporated County

- **Rebuilding: Commonly Asked Questions**
- **County of San Diego Building Division Agency Contact List**
- **Emergency Temporary Occupancy Permits for Fire Damaged Homes**
- **Permit Processing for Fire Damaged Homes – Onsite Sewage Disposal Systems**
- **Minimum Plot Plan Information**
- **2016 Agriculture Fire Damage Agricultural Assessment Form**
- **Property Tax Disaster Relief Information**
- **Property Tax Disaster Relief Application**

Debris Assistance

- **Homeowners' Guide for Flood, Debris, and Erosion Control after Fires**
- **Post-Fire Ash and Debris Cleanup Guidance**
- **Fact Sheet: Protecting Public Health from Home and Building Fire Ash** (Safe Cleanup of Fire Ash)
- **Construction & Demolition Recycling Guide**
- **Construction & Demolition Recycling Facility Directory**
- **Landfill and Transfer Station Map**

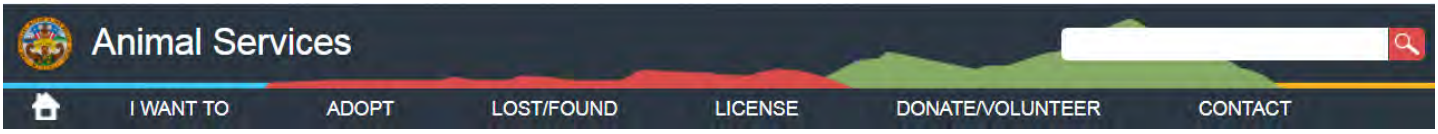
Public Health and Hazardous Waste

- **What To Do After A Wildfire: Safety Tips**
- **Managing Propane Tanks and Cylinders In Areas Affected by Wildfire**
- **Household Hazardous Waste Information**
- **Household Hazardous Waste Collection Facilities**
- **More Environmental Health Information**

Consumer Information

- **Avoid Post-Disaster Rip-Offs**
- **Beware of Scams** (video)
- **Avoid Unlicensed Contractors** (California Licensing Board)

https://www.sddac.com/content/sdc/das/adopt/care/pet_disaster_plan.html



Pet Disaster Plan

Prepared by the County of San Diego Department of Animal Services

We recommend that everyone prepares for an emergency by gathering necessary supplies ahead of time, and practicing your family disaster plan. For most of us, pets are part of our family so we need an emergency plan to protect them as well.

NEVER leave your pet chained outside and if you evacuate your home DO NOT LEAVE YOUR PETS! You may not be able to return to your home or animal enclosure for an extended period of time. In addition, structural damage to your home or animal enclosure may allow your pet to escape, or to permit other animals or natural elements to enter and hurt your pet.

Be prepared to quickly evacuate with your pet(s) if you become aware of any risk in your neighborhood. If an evacuation seems possible, do it earlier rather than later. Do not wait until the last minute. Disaster-related weather, visibility and road conditions could present additional challenges, but especially for those transporting livestock.

Many pets and livestock have been lost in previous emergencies. One of the best protection methods is to microchip your animal.

The permanent microchip holds your contact information and can be scanned at many shelters and veterinarian offices. Notify the microchip company if you change your address or phone number.

Start a buddy system with your neighbors and agree to check on each other's animals if someone is not home during an emergency. Consider placing an authorization in your veterinarian's file for your neighbor to request emergency veterinary treatment for your animal(s) in your absence.

If you have a dog, put its picture in the free app Finding Rover for a better chance of being reunited if it does get lost.

Create a pet emergency kit with sufficient supplies for each pet:

- Leash, harness or pet carrier (large enough for your pet to stand and turn around in) and a muzzle for any dog known to be aggressive or defensive around people or other animals
- Stake and tie-out for each dog
- Properly-fitting leather or nylon collar with securely attached license tag for dogs, AND identity tag listing your address and phone number for cats and dogs
- All animals should have some type of identification on them
- One week supply of water; pet food (preferably dry); unbreakable water bowl or dispenser; sturdy food bowl or feeder; manually-operated can opener and plastic can lid for canned food
- Copy of current veterinary records including rabies and wellness vaccination certificates; at least a week's worth of any needed medicines and supplies in a waterproof container; proof of current vaccinations may be required by boarding facilities
- Pet first aid kit including wound cleaning and bandaging material
- Supplies to collect and dispose of pet waste like plastic bags, scooper, or cat litter
- Several recent photographs of your pet in waterproof container in case it gets lost

- List of phone numbers and addresses of local organizations that may provide emergency assistance including your veterinarian, local animal services agencies, County Animal Services, humane society, agricultural associations, feed store, state/county veterinarian and the American Red Cross

As part of your preparation, locate kennels, veterinary facilities or other boarding and pet-friendly lodging near your home. Look for those that have easy access from primary and alternate evacuation routes in and out of your neighborhood.

During a disaster listen to local emergency broadcast radio stations for information on shelters and holding areas that may be available to temporarily house your pets and livestock.

Livestock Considerations

- Map primary and alternate evacuation routes and temporary boarding sites or livestock holding facilities.
- Horse owners should have a halter and lead line for each horse. Keep them on or near its enclosure gate.
- Owners of any livestock should post emergency contact information in a conspicuous place.
- Make arrangements to ensure that suitable vehicles, trailers, handlers and drivers are available to transport livestock. Be sure your animals are familiar with transporting vehicles before an emergency.
- Make sure horses and other companion animals have microchip identification and that all animals have some identification.

If large animals cannot be evacuated, determine whether they can be moved to a shelter or be allowed to remain in an outside enclosure, based on the type of disaster, and the reliability of the location.

From:	Chris Jacobs
To:	Marni Borg
Subject:	FW: Fanita Ranch FREIR - PWS Exhibit 25-32
Date:	Monday, July 25, 2022 5:10:14 PM
Attachments:	PWS Exhibits 25-32 Fanita FREIR July 2022.pdf

From: Save Fanita <savefanita@gmail.com>
Sent: Sunday, July 24, 2022 4:08 PM
To: Chris Jacobs <CJacobs@CityofSanteeCa.gov>
Subject: Fanita Ranch FREIR - PWS Exhibit 25-32

THE Parker Edison PROJECT SEASON 2
A sonic exploration of culture as a lifestyle.
LISTEN NOW

KPBS Midday Edition

Insurance Companies Increasingly Drop Homes Throughout San Diego County As Fire Risks Rise

By Camille von Kaenel / inewsource
Published September 3, 2021 at 10:35 AM PDT

Zoë Meyers
San Diego fire crews put down a fire near Fairmont Avenue and Aldine Drive in San Diego, Calif., October 15, 2019.

Sep 9, 2021
Insurance Companies Increasingly Drop Homes…
The threat of wildfire is increasingly leading insurers to drop the policies of San Diego homeowners, a trend most prominent in the county's rural areas but also affecting…
Read More
LISTEN • 6:04

The threat of wildfire is increasingly leading insurers to drop the policies of San Diego homeowners, a trend most prominent in the county's rural areas but also affecting city neighborhoods from Scripps Ranch to Hillcrest.

Seven out of 10 insured homes in San Diego County were located in ZIP codes where insurers increased the share of policies they dropped from 2015 to 2019, according to an *inewsource* analysis of the most recently available California Department of Insurance data.

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The biggest single-year jump came in 2019, when insurers dropped 3.7% of all homeowners policies countywide, up from 2.3% in 2018.

The data on homeowners insurance non-renewals in San Diego County, which have not previously been published, show that both high rates of non-renewals and the greatest spike in non-renewal rates from 2015 to 2019 happened in the sparsely populated eastern regions of the county, where the largest brush fires take place. For example, the highest spike in non-renewals occurred in tiny Guatay, along old Highway 80 in the Cuyamaca Mountains, where the rate jumped from 4% of policies getting dropped in 2015 to 42% of policies in 2019.

Zoë Meyers
Maddyson Wallace looks on as her father holds a horse that is having its hooves trimmed at the Wallace's home in Jamul, Sept. 1, 2021.

San Diego's most destructive fire last year took place in Jamul and Alpine, which insurers had increasingly fled in the preceding years, dropping 16% and 14% of policies in those areas, respectively, in 2019 alone.

After the Sept. 2020 Valley fire, homeowners in the 16 East County ZIP codes in or near the burned areas have been protected from losing their insurance by a new state law that pauses insurance non-renewals for one year in areas that just went through major wildfires. But those protections end Sept. 7, when insurers will be allowed to send notices of non-renewals again.

Tap into KPBS in one place. Download the KPBS app now. LEARN MORE

The rising non-renewals are also affecting neighborhoods in the city of San Diego, including some slated for more residential development as part of the city's plan to meet its expanding housing needs.

The sixth highest spike in dropped homeowner policies came in the Scripps Ranch ZIP code, which was burned in the Cedar fire of 2003. There, 9.7% of policies were dropped in 2019, up from 1.6% of policies in 2015. The fire destroyed more than 300 homes in the city of San Diego, hitting Scripps Ranch and Tierrasanta the hardest.

RELATED: Gov. Newsom Signs Law To Give Farmers Help With Fire Insurance

Non-renewals more than doubled from 2015 to 2019 in ZIP codes in Sorrento Valley, Rancho Peñasquitos and Rancho Bernardo, communities on the outskirts of the city. Other neighborhoods with increases include Tierrasanta, where non-renewal rates almost doubled, and the canyon-adjacent communities of Hillcrest and Clairemont closer to downtown, which saw 21.9% and 3.6% increases in non-renewals rates from 2015 to 2019.

Look up insurance cancellation trends in your ZIP code at inewsource.org.

One of the homeowners experiencing the problem is Tammy Smith, who has lived off and on at her family's Clairemont home near the San Clemente Canyon since she was born in 1959. She said she got a letter about a year ago from AAA saying the company would not renew her homeowner's insurance.

"They decided that I was in a fire zone," Smith said. "I live on a canyon, but ... we've never, ever had a problem in my lifetime."

She felt she couldn't fight "big business" and the rules had been changed on her.

Working with an independent insurance agent, she said she found a better replacement policy with Farmers Insurance. But, she added, it's impossible for her to meet her new insurer's recommendation in a July letter to remove all vegetation from within 100 feet of her home to get the lowest rate. That's because the 100-foot zone would stretch into a neighbor's backyard.

AAA did not respond to a request for comment, and the Department of Insurance does not include why insurers dropped each policy in the ZIP code data. But government officials have blamed the rising statewide difficulty of getting affordable coverage on insurance companies reevaluating the risk they're willing to take following devastating wildfires fueled by climate change and dry vegetation.

In total, insurers have dropped 84,722 policies in San Diego County from 2015 through 2019. The average number of policyholders each year is around 680,000. Many areas experienced their biggest spike in non-renewals in 2019, with more than a dozen ZIP codes seeing more than a tenth of policies dropped in that year alone.

RELATED: Court: California Can Expand Insurance For Wildfire Areas

The ZIP codes that saw decreased rates in non-renewals from 2015-19, including in Coronado, Imperial Beach and Pacific Beach, are mostly located along the coast.

The increasing non-renewals can place an additional financial burden on homeowners whose mortgages require them to carry insurance at a time when costs are rising. Nearly 90% of the 264 Californians who filled out a voluntary survey by nonprofit United Policyholders said their cost of insurance went up when they switched insurers. Respondents from San Diego County cited increases between $200 and $3,000 a year or more.

Some residents facing mounting insurance problems want the city to do more to address the high fire hazards blanketing their neighborhoods near public open space from Cabrillo Canyon in Balboa Park to Tecolote Canyon in Clairemont to Black Mountain Open Space Park.

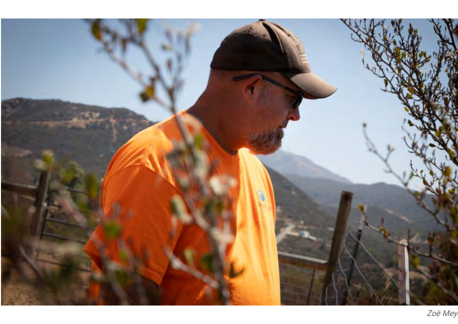
"It just needs to be better handled because we can't screw around anymore," said Lisa Johnson, a 20-year resident of a home on the rim of Tecolote Canyon in Clairemont. "We have wildfires all the time now."

As chair of the Coastal Canyon Fire Safe Council, Johnson advocates for more fire safety as her community is targeted for more growth. She said her residential policy was dropped by State Farm following the 2007 wildfires that burned 9,250 acres and 365 homes in the city of San Diego.

"If cities and states are not providing the fire preparedness that we need as homeowners, and we as homeowners are being held responsible for that by our insurance company, that creates a really big problem," she said.

No detailed record of city brush management

As homeowners ask why their policies were dropped and who to blame, advocates for policyholders want more rules guiding the insurers' decisions not to renew policies.


Zoë Meyers
Steve Wallace looks out from his property line in Jamul, Sept. 1, 2021.

Steve Wallace, a Jamul resident and a member of the Jamul Fire Safe Council who saw the Valley fire last year get within 500 feet of his home, said he expects insurers to drop a lot of policies in his community once the one-year ban for areas that went through wildfires ends. He wishes there were more protections for homeowners, especially those who clear defensible space and upgrade their homes to make them more fire-resistant.

"If they don't clean it up and they're not taking care of the property, then that's a valid reason," he said about insurers deciding to drop a homeowner's policy. "But just because of where they live, I don't see how they should be allowed to do that."

Asked to weigh in on the trend, Mayor Todd Gloria's office declined to comment. A spokesman for Insurance Commissioner Ricardo Lara said he is seeking to increase competition for consumers' business by developing standards to encourage insurance companies to write policies in areas of high fire hazard if homeowners take steps to reduce the risk.

To create defensible space aimed at protecting homes from wildfires, the city of San Diego requires property owners to clear vegetation from the 35 feet around their homes and thin the vegetation out to 100 feet.

City officers inspect roughly 45,000 properties over 3.5 years for brush and weeds, although they failed to meet inspection targets in the last two years because of unfilled positions.

Where the 100-foot zone extends into public land, the city is most often responsible for thinning flammable vegetation. That comes out to 921 acres which crews from the city's Parks and Recreation Department's Open Space Division visit on a rotating schedule about every two years. The city says it gets close to its targets for brush management every year. But it does not keep detailed records or maps of where precisely crews are thinning the vegetation, said Tim Graham, a department spokesperson.

Johnson said she's only seen crews thinning vegetation behind one or two parcels in the canyon behind her house, but she's never seen them working along slopes across much of the canyon. Last month, *inewsource* visited Johnson's neighborhood and noted dry grasses and brush on one side of the canyon and dense foliage from the bottom of the canyon to right up against homes on the other side. For some of the properties, the vegetation in the canyon appears to violate the requirement that homes have 100 feet of defensible space.

RELATED: PG&E Will Spend Up To $30 Billion Burying Power Lines

Graham said there could be a few reasons explaining why homeowners might not see crews behind their houses, including if the area was already in compliance with the goal of thinning vegetation to 50% or if the area was unsafe because it was too steep or had poison oak or cactus.

The city's responsibility to clear vegetation near homes also only extends to homes built before 1989, when the brush regulations were adopted, he said.

Roughly 1,500 complaints come in every year regarding brush, city fire marshal Doug Perry told the city of San Diego's public safety committee in June of this year. Though property owners have six weeks to fix their problem if they're found to be out of compliance, there is no deadline for the city to address complaints on public land, he explained.

Perry told *inewsource* last month the city is doing its best given a limited budget to thin vegetation near homes within the 100-foot buffer required. However, the city's brush management does not extend to the much larger open spaces near residential areas.

"I don't think you're ever going to see the large areas have any kind of vegetation management, unless there's some kind of state funds or federal funds and a determination is made that this would be a great place to do a firebreak," he said.

He also said that environmental rules can add time to a project due to reviews and restrict when and where the thinning of vegetation, especially native vegetation, can take place.

For example, crews cannot cut down vegetation in habitat for the California gnatcatcher, an endangered species with a range limited to parts of Southern California and Baja California, during nesting season between March and September.

RELATED: Proposed Bill Would Give California Farmers Last-Resort Option For Fire Insurance

Despite those obstacles for land managers trying to prevent fires, insurers are watching, including in more urban neighborhoods, insurance professionals say.

Staci Pappazi, the owner of Pappazi Insurance Agency, said she's seen insurers get more strict over the last two to three years. She said she can sometimes tell just from a satellite view of a client's home whether insurers will shirk from providing coverage because of nearby brush.

"It's not your areas of Jamul and Descanso and Boulevard and Pine Valley that you would expect," Pappazi said. "There's a lot of 92117, which is Clairemont; 92119, which is San Carlos; 92120, which is Del Cerro, that are also struggling and going through this right now."

The San Diego Fire-Rescue Department has already responded to hundreds of vegetation fires from January to July of this year, according to records shared with *inewsource*. A fire in a dry field along Carmel Valley Road grew to 10 acres on June 27, getting within yards of homes, but no other fires were larger than two acres and most were contained to spot fires. Perry said the city has been adding equipment to its arsenal including a $20 million helicopter in 2019 to drop water to quickly stop fires, including at night.

But there is a risk an ember storm from even a small blaze could roar quickly through a canyon.

It's happened before: in 1985, a fire fueled by heavy dry brush and winds swept up Mission Valley canyons to destroy 76 homes in Normal Heights.

Struggling to find homeowners insurance? Recently dropped? Tell inewsource about your experience.

Tags: KPBS Midday Edition | East County | Wildfires | Housing

Dropped by your insurer?

The nonprofit group United Policyholders and the Department of Insurance recommend you take the following steps.

- Act promptly. California law requires insurers to give you 75 days notice, and it may take that entire time to find a replacement.
- Shop around. Look up a list of insurance companies and a list of agents and brokers available near you using a tool developed by the Insurance Department.
- Shop smart. Most homeowners are underinsured, meaning their insurers won't cover the full replacement value of a home in case of a total loss.
- Get the California FAIR Plan as a last resort. The state requires this insurance pool to provide basic coverage to people out of other options, but it may cost more and cover less.

For more, go to www.uphelp.org/dropped

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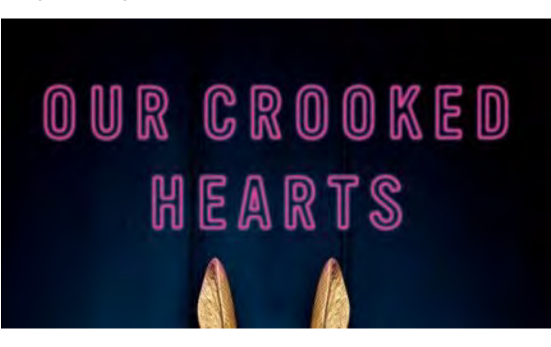

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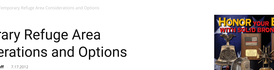

Firefighter

Temporary Refuge Area Considerations and Options

By **FirefighterNation Staff** 7.17.2012

Like 1

During wildland/urban interface (WUI) fires, it's become an all-too-common occurrence for firefighters to take greater risks when defending civilians and assets. Although no fire agency suggests taking extraordinary risks, firefighters have a natural tendency to push the envelope when lives and structures are threatened.

Of course, a "can-do" attitude must be tempered with real-time fire behavior forecasting and the mindset that threatened assets should be defended with acceptable risk to firefighters. But as we all know, conditions that are safe one moment can change rapidly, posing a threat as fire behavior shifts. Firefighters must anticipate changes in fire behavior and respond accordingly, taking appropriate action to avoid injury.

It is the responsibility of all firefighters to constantly assess their own safety and the safety of those around them by maintaining a heightened level of situational awareness (SA) in the WUI. SA requires personnel to:

- Understand their assignment;
- Maintain a positive accountability of subordinates;
- Remain aware of adjoining resources and their assignments;
- Remain aware of current and forecasted weather and fire behavior;
- Maintain radio communications with subordinates and supervisors; and
- Establish identified temporary refuge areas and escape routes to safety zones.

Safety Zones & Escape Routes

When identifying escape routes, consider the distance between the tactical work area and the safety zone, and the amount of time it will take to travel between the two. Travel time should be commensurate with the rate of fire spread. As resources move within their tactical work area, escape routes must be reevaluated and reestablished as needed.

The size of a safety zone is determined by the observed maximum flame height. The Incident Response Pocket Guide (IRPG) states that distance between the firefighter and the flames should be a minimum of four times the maximum continuous flame height. Distance separation equals the radius from the center of the safety zone to the nearest fuels. Convective heat from wind or topographic influences will increase this distance requirement.

Safety zones that meet the IRPG criteria are rarely present in the WUI environment, where housing density and small parcel sizes preclude the existence of large, open areas. It's also difficult to construct adequate safety zones in the WUI without destroying residential improvements; however, there are WUI-specific areas that can function as safety zones:

- Any area without flammable vegetation (rock slide, bodies of water, wet meadows, cleared open space, greenbelts)
- Large parking lots
- School/athletic fields
- Parks with open, grassy areas
- Previously burned areas with no flammable overstory (canopy)

Where the TRA Fits In

The temporary refuge area (TRA) concept is somewhat new to the WUI firefighting arena; however, it has been adopted by FIRESCOPE and is currently part of the California Department of Forestry and Fire Protection (CAL FIRE) WUI training curriculum.

In short, anything that protects firefighters from radiant or convective heat can be considered a TRA; therefore, if an escape route to a safety zone becomes compromised, firefighters should use a TRA until it's safe to move to the safety zone or safely return to work. Keep in mind, however, that a TRA is not a replacement for an identified safety zone; it is merely a temporary, short-term solution that firefighters can use when needed.

TRA Considerations

Unlike a safety zone that may be some distance away from the tactical work area, a TRA should always be identified on site so that firefighters can quickly secure short-term relief from unexpected flare-ups or adverse changes in fire behavior.

The major difference between a TRA and a safety zone: TRAs may not provide continuous, adequate safety and protection because of changing fire conditions or extreme fire behavior, therefore a TRA always requires another planned tactical action. Firefighters who take shelter in a TRA must have a contingency plan in place in the event they are forced to abandon their position. For example, firefighters taking temporary refuge inside a structure must plan their next move in case the structure begins to burn and they can't remain inside. This may mean moving to an apparatus, sheltering behind a wall or rock outcropping or finding another suitable heat barrier.

Potential WUI TRAs include:

- Large turnouts, cul-de-sacs or parking lots
- On-site greenbelts, meadows, pastures, large lawns
- Lee side of structures
- Inside apparatus
- Inside structures

When using a TRA, keep all personnel together, and continuously account for all crewmembers. Provide fireline supervisors with situation details and an accurate description of the TRA location and how to access it, and request ground and/or air support and rescue resources, if needed.

When the threat subsides, evaluate personnel for injuries and provide treatment as necessary. Update fireline supervisors of the crew's status and any additional resource needs. When safe to do so, re-engage the fire or move to the safety zone.

What to Use: Apparatus or Structure?

As a TRA, an apparatus can provide tactical mobility as well as some protection from radiant heat, blowing embers, dust, smoke and other hot gasses. With the exception of tactical mobility, a structure can provide the same.

When determining whether to use an apparatus or structure as a TRA, consider:

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- Fire behavior, intensity and rate of spread
- Vegetation clearance around the apparatus or structure
- Fuel type (grass vs. heavy fuels) and loading
- Duration of exposure to heat and direct flame impingement
- Proximity to concentrated heat sources
- Proximity to adverse topographic features (drainages, chimneys etc.)

When preparing an apparatus for use as a TRA, park facing the direction of the escape route, and run the engine at a high idle (1,000 rpm if available, so that thick smoke, soot and dust don't bog down the engine and possibly stall it out.). Close all windows, and deploy fire shelters over windows, if necessary. Turn on all lights, including headlights and emergency lights, so that the crew can find its way to the apparatus and others can see the apparatus,and be ready to disconnect deployed hoselays. Take structure fire PPE, SCBA and drinking water into the cab, and be prepared to move the vehicle to the safety zone as conditions permit. Lastly, notify your supervisor that the vehicle is being used as a TRA.

Preparing a structure for use as a TRA is very similar: First, close all windows and doors, and remove flammable materials from windows. If drapes are present, close or remove them if they're made of flammable material. Turn on all interior and exterior lights, even during the daytime. Apply a Class A foam or gel on the structure's exterior (time permitting), and fire out around the structure (if appropriate). Deploy charged hoselines from the apparatus and garden hoses through openings on the least involved side. Take structure fire PPE, SCBA and drinking water into the structure and move to a location furthest from the fire. Identify alternate exits and notify your supervisor that you're using the structure as a TRA.

Keep in mind that using an apparatus or structure as a TRA requires another planned tactical action in the event that conditions deteriorate. The apparatus operator must be prepared to move to another TRA or use an escape route to withdraw to a safety zone when safe to do so. If conditions inside the structure deteriorate, firefighters must be prepared to leave the structure and move to another TRA or use an escape route to withdraw to a safety zone when safe to do so.

Other considerations/precautions when using a vehicle/structure TRA: above-ground fuel storage, power lines, ditches and bridges.

Important: Do not use a structure or apparatus TRA as a substitute for identifying and utilizing viable escape routes and safety zones. Only use a structure or apparatus TRA if escape routes to safety zones have been compromised.

Your Exit Strategy

A review of near-miss reports and fatal fires reveals that many firefighters have abandoned or ignored suitable TRAs while engaged in structure defense or while en route to a safety zone, rather than waiting in a TRA until conditions allowed for safe access to a safety zone. *Remember:* Firefighting in the WUI is dangerous, and as such, it always requires a planned exit strategy. That strategy should always include the following:

1. Employ a tactical maneuver to avoid injury; move away from the fire.
2. Move to an identified TRA.
3. Withdraw along an escape route.
4. Move into an established safety zone.

Sidebar: Define Our Terms

- Escape routes are identified routes used to withdraw from a tactical work area to a pre-determined safety zone or temporary refuge area.
- A safety zone is a pre-planned area of sufficient size and suitable location that is expected to protect personnel and apparatus without deploying fire shelters.
- A temporary refuge area (TRA) is a pre-identified area where firefighters can immediately take refuge for temporary shelter and short-term relief without deploying a fire shelter in the event that access to an established safety zone is compromised.

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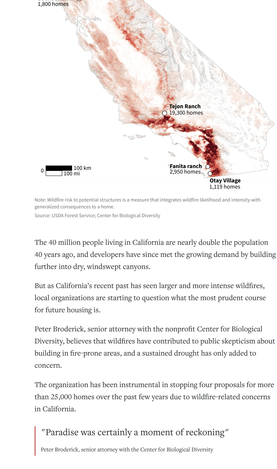
Climate change

California fires threaten unbuilt housing

Housing developments across California are being sent back to the drawing board due to inadequate planning for the wildfires plaguing the Golden State.

By Travis Hartman and Daniel Trotta
PUBLISHED MAY 2, 2022



Note: Wildfire risk to potential structures is a measure that integrates wildfire likelihood and intensity with generalized consequences to a home.
Source: USDA Forest Service; Center for Biological Diversity

The 40 million people living in California are nearly double the population 40 years ago, and developers have since met the growing demand by building further into dry, windswept canyons.

But as California's recent past has seen larger and more intense wildfires, local organizations are starting to question what the most prudent course for future housing is.

Peter Broderick, senior attorney with the nonprofit Center for Biological Diversity, believes that wildfires have contributed to public skepticism about building in fire-prone areas, and a sustained drought has only added to concern.

The organization has been instrumental in stopping four proposals for more than 25,000 homes over the past few years due to wildfire-related concerns in California.

> "Paradise was certainly a moment of reckoning"
>
> Peter Broderick, senior attorney with the Center for Biological Diversity

The Center for Biological Diversity's legal line of attack, rooted in provisions of the California Environmental Quality Act, has become increasingly effective since the 2018 Camp Fire destroyed thousands of homes in Paradise, California. Some of the 85 people killed were engulfed in flames as they were stuck in traffic trying to escape the town.

The hills north of Santee, California, where the almost 3,000 houses in the Fanita Ranch proposal were to be built. Mike Blake / Reuters

In the Guenoc Valley case and two others in San Diego County, the California attorney general has joined to challenge the adequacy of environmental reviews.

"Every year, tens of thousands of Californians are forced to flee their homes as a result of wildfires. Donens have died — often as a result of insufficient evacuation planning," California Attorney General Rob Bonta said in a statement to Reuters.

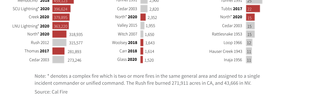
Statewide wildfire evacuation data is not compiled by the state of California. Evacuation orders are normally issued by the local law enforcement in the area, and they are advised by the organization in charge of managing the fire.

Thomas Cova, a geography professor at the University of Utah in Salt Lake City, notes that wildfires have some unique characteristics that make them harder to plan for than other types of disasters that may require evacuation. Hurricanes for example, are monitored as tropical depressions across the ocean and coastal residents generally know when and where they will land with a good amount of lead time. Many wildfires also start out in the wilderness and move slowly and in predictable ways. "But some fires, the really scary ones, can move really quick, start right near a community and give less warning time than you would ever want," Cova said.

Eight of California's ten largest wildfires and six of the ten most destructive have occurred in the last five years, according to Cal Fire. Wildfires are becoming a potentially larger threat to housing as drought continues to create greater amounts of ready fuel, and severe wind events push fire across the landscape with incredible speed.

California fires

Bars in red show fires from the last five years.



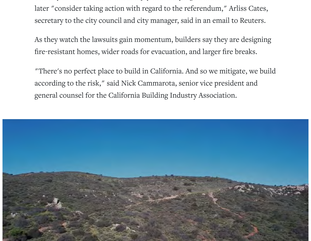
Note: * denotes a complex fire which is two or more fires in the same general area and assigned to a single incident commander or unified command. The Rush fire burned 272,913 acres in CA, and 43,666 in NV.
Source: Cal Fire

Fanita Ranch

The Center for Biological Diversity successfully sued to stop Fanita Ranch, a roughly 3,000 home development planned for the undeveloped scrubland northeast of Santee, California, increasing the city's population of 60,000 by perhaps another 10,000 people.

Fanita Ranch was halted largely on grounds that evacuation plans were inadequate. As part of her April 6 ruling, the judge found one of the project's purported escape routes toward a state highway was a dead-end street.

In response, the developers are revising evacuation plans, said Jeff O'Connor, vice president of community development for HomeFed Corporation, a Jefferies Financial Group subsidiary. They expect to resubmit plans to the city council by July.



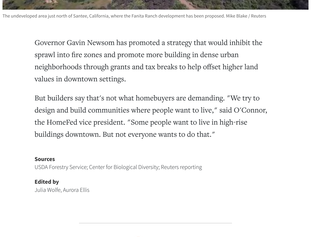
Source: USDA Forest Service; Center for Biological Diversity

Beyond the lawsuit that has halted the Fanita Ranch development, voters in the city will have a chance to reject the development in a referendum set for the November ballot.

The city of Santee said it will comply with the judge's order for now and later "consider taking action with regard to the referendum," Arliss Cates, secretary to the city council and city manager, said in an email to Reuters.

As they watch the lawsuits gain momentum, builders say they are designing fire-resistant homes, wider roads for evacuation, and larger fire breaks.

"There's no perfect place to build in California. And so we mitigate, we build according to the risk," said Nick Cammarota, senior vice president and general counsel for the California Building Industry Association.



The undeveloped area just north of Santee, California, where the Fanita Ranch development has been proposed. Mike Blake / Reuters

Governor Gavin Newsom has promoted a strategy that would inhibit the sprawl into fire zones and promote more building in dense urban neighborhoods through grants and tax breaks to help offset higher land values in downtown settings.

But builders say that's not what homebuyers are demanding. "We try to design and build communities where people want to live," said O'Connor, the HomeFed vice president. "Some people want to live in high-rise buildings downtown. But not everyone wants to do that."

Sources
USDA Forestry Service; Center for Biological Diversity; Reuters reporting

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United States

As California burns, environmentalists find new tactic to halt development

By Daniel Trotta

5 minute read

SANTEE, Calif., May 3 (Reuters) - The view from atop Fanita Ranch is nearly 360 degrees of rolling hills and chaparral-covered canyons, with only a few homes visible in the distant southwest.

The idyllic setting, with a scent of sagebrush wafting in the wind, has long made Fanita Ranch the object of desire for property developers. It is also at very high risk for wildfires.

Van Collinsworth remembers when the 2003 Cedar Fire roared in those same hills just above his home in the San Diego suburb of Santee. At the time it was the largest wildfire in California history, destroying 2,820 buildings and killing 15 people, and climate change has only intensified since then. read more

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"The fire was moving like a freight train," Collinsworth, a 63-year-old former wildland firefighter, said on a recent 97 Fahrenheit (36 Celsius) afternoon, pointing toward the undeveloped scrubland northeast of Santee, his home since childhood.

Largest California wildfires

Eight of the 10 largest wildfires in California history have occurred in the last five years.

Note: The Rush fire burned 271,911 acres in CA, and 43,666 in NV.
Source: Cal Fire

Reuters Graphics

A local subsidiary of New York investment bank Jefferies Financial Group (JEF.N) wants to build nearly 3,000 homes on Fanita Ranch, increasing Santee's population of 60,000 by perhaps another 10,000 people. But Jefferies faces a new legal tactic based on fire safety that has stopped the development and others like it up and down California.

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The nonprofit Center for Biological Diversity successfully sued to stop Fanita Ranch, largely on grounds that evacuation plans were inadequate. As part of her April 6 ruling, the judge found one of the project's purported escape routes toward a state highway was a dead-end street. Collinsworth is part of the group Preserve Wild Santee that was among the plaintiffs.

In response, the developers are revising evacuation plans, said Jeff O'Connor, vice president of community development for HomeFed Corporation, a Jefferies subsidiary. They expect to resubmit plans to the city council by July.

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"We are providing somewhere for people to sleep at night. And they're trying to stop us," O'Connor said.

At stake is the future blueprint for housing in California, where the population of 40 million has nearly doubled in the past 40 years as developers met growing demand by building further into dry, windswept canyons. Meanwhile, the state's wildfires are ever more destructive. The eight fires that have since surpassed Cedar in size have all burned since 2017, with five of the top seven in 2020.

California's most destructive fires

Six of the most destructive fires in California history have occurred in the last five years.

Source: Cal Fire

Reuters Graphics Reuters Graphics

The implications could extend beyond state borders. California is closely watched both for its leadership on environmental issues and for lessons that other states can draw as they cope with wildfire and housing issues.

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The Center for Biological Diversity's legal line of attack, rooted in provisions of the California Environmental Quality Act, has become increasingly effective since the 2018 Camp Fire destroyed 11,000 homes in Paradise, California. Some of the 85 people killed were engulfed in flames as they were stuck in traffic trying to escape.

California's deadliest fires

Three of California's ten deadliest fires have occurred in the last five years.

Source: Cal Fire

Reuters Graphics

1/6 The nonprofit Center for Biological Diversity has halted at least four major housing projects up and down the state, including this one in Santee, California by arguing developers failed to provide sufficient...
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The center has been instrumental in stopping four proposals for a total of more than 25,000 homes in recent years.

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In addition to Fanita Ranch, the center's lawsuits have halted plans for 1,800 luxury units in Guenoc Valley in northern California pending further evacuation safety review; another 1,119 homes in San Diego County's Otay Ranch Village 14 project over wildfire risk; and 19,300 homes near the Tehachapi Mountains in Los Angeles County, again over wildfire risk.

The center has also filed lawsuits that have yet to go to trial challenging two other San Diego County projects.

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"Paradise was certainly a moment of reckoning," said Peter Broderick, senior attorney with the Center for Biological Diversity, who believes the escalating size and intensity of wildfires has contributed to public skepticism about building in fire-prone areas, and a sustained drought has only added to concern.

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"Every year, tens of thousands of Californians are forced to flee their homes as a result of wildfires. Dozens have died – often as a result of insufficient evacuation planning," California Attorney General Rob Bonta said in a statement to Reuters.

As they watch the lawsuits gain momentum, builders say they are designing fire-resistant homes, wider roads for evacuation, and larger fire breaks.

"There's no perfect place to build in California. And so we mitigate, we build according to the risk," said Nick Cammarota, senior vice president and general counsel for the California Building Industry Association.

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The association also is sponsoring a bill that would require wildfire protections including wide evacuation routes within future master-planned communities and place greater responsibility on local fire authorities to determine if projects meet safety requirements. Such regulation could preempt interference from outside interests, building industry representatives say.

In addition to the lawsuit, Preserve Wild Santee is hoping the voters will reject the development once and for all in a referendum set for the November ballot.

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The city of Santee said it will comply with the judge's order for now and later "consider taking action with regard to the referendum," Arliss Cates, secretary to the city council and city manager, said in an email to Reuters.

Modern information technology has improved the efficiency and precision of large evacuations, said Santee Fire Chief John Garlow, who said he believes officials could safely evacuate a fully developed Fanita Ranch.

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Governor Gavin Newsom has promoted a strategy that would inhibit the sprawl into fire zones and promote more building in dense urban neighborhoods through grants and tax breaks to help offset higher land values in downtown settings.

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"We try to design and build communities where people want to live," said O'Connor, the HomeFed vice president. "Some people want to live in high rise buildings downtown. But not everyone wants to do that."

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United States

Google to delete location history of visits to abortion clinics

United States · July 1, 2022

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MANDATED VS. VOLUNTARY ADAPTATION TO NATURAL DISASTERS: THE CASE OF U.S. WILDFIRES

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Mandated vs. Voluntary Adaptation to Natural Disasters: The Case of U.S. Wildfires
Patrick W. Baylis and Judson Boomhower
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ABSTRACT

Despite escalating disaster losses and predicted increases in weather-related catastrophes, takeup of protective technologies and behaviors appears limited by myopia, externalities, and other factors. One response to such frictions is to mandate adaptive investment. We measure the effect of California's wildfire building codes on own- and neighboring structure survival using administrative damage and assessment data for most US homes experiencing wildfires since 2000. Differences across jurisdictions and vintages reveal remarkable resilience effects of building codes initially prompted by the deadly 1991 Oakland Firestorm. Codes also benefit neighbors. We use the results to estimate net social benefits of wildfire building standards.

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Worldwide natural disaster losses averaged $218 billion per year during 2016–2020, a 60% increase in real terms over the preceding 30 years.[1] This trend is predicted to accelerate under future climate change. Efficient investment in adaptation is essential in the face of these escalating risks. Yet takeup of protective technologies and behaviors appears to be hindered by a constellation of market frictions. Homeowners misperceive disaster risks and thus the value of protective investments (Hallstrom and Smith 2005; Donovan, Champ, and Butry 2007; Gallagher 2014; McCoy and Walsh 2018; Bakkensen and Barrage, Forthcoming). Monitoring costs and other insurance market imperfections mean that mitigation behaviors may not be accurately reflected in property insurance prices (Kunreuther and Michel-Kerjan 2011; California Department of Insurance 2018; Wagner, Forthcoming). Public disaster spending programs may reduce private incentives for property protection (Kousky, Luttmer, and Zeckhauser 2006; Deryugina 2017; Baylis and Boomhower 2019). And in some settings, spatial externalities across neighboring properties lead to diverging private and social benefits of mitigation (Shafran 2008; Costello, Quérou, and Tomini 2017).

One widely-adopted approach to these market failures is to provide information and subsidies to increase voluntary takeup.[2] A more controversial but increasingly common alternative is to *mandate* investments in resilience.[3] Mandatory standards ensure wider adoption. However, if the regulator misjudges the effectiveness of the required actions, the level of the hazard, or individual risk

1. Loss data are from Munich RE and are in 2020 dollars.

2. Examples in the U.S. include the Ready campaign and Ready.gov website; the Community Rating System under the National Flood Insurance Program; the StormReady, Hurricane Protection Week, and National Tsunami Hazard Mitigation programs; the Firewise USA program; and the Community Wildfire Protection Plan program.

3. Florida has construction standards for hurricane winds, and codes also exist in various regions for winter storms and non-weather disasters such as earthquakes and tsunamis (Federal Emergency Management Agency 2020). In flood-prone areas, U.S. federal rules require homes to be elevated and some localities have imposed even stricter requirements. California, Utah, Nevada, and Pennsylvania have statewide wildfire building standards while in other states, notably Colorado, wildfire codes have been adopted at the local level (Insurance Institute for Business and Home Safety 2019). Australia, New Zealand, France, and Italy also have wildfire building codes (Intini et al. 2020).

preferences, some individuals may be compelled to make costly investments they would have preferred to avoid even if fully informed and fully accountable. Implementing mandatory standards is also more politically challenging.[4] Despite the important differences between these instruments, there is little empirical evidence about outcomes under a mandated resilience regime compared to a counterfactual of purely voluntary takeup.

In this paper, we consider the case of wildfire building codes in California. California has suffered over $40 billion dollars in wildfire property damages in the past 5 years. The state also has among the strictest wildfire building codes in the world. We provide the first comprehensive evaluation of the effect of these codes on own-structure survival as well as neighbor spillovers via structure to structure fire spread. We then embed these empirical estimates in an economic model to calculate net social benefits of wildfire building codes as a function of local wildfire hazard and number of close neighbors.

This analysis takes advantage of a new dataset that includes property-level data for almost all U.S. homes exposed to wildfire between 2000 and 2020. We compiled the data by requesting post-incident damage censuses from numerous emergency management agencies and individual county assessors. We merged these lists of damaged homes to assessor data for the universe of (destroyed and surviving) homes inside wildfire burn areas. The data show that even during catastrophic wildfires, more than 50% of exposed homes survive. One of the key advantages of the new data is the ability to observe and learn from these surviving homes. The property-level loss information also distinguishes the wildfire data from floods and other disasters where loss data are typically available at the zip code or Census tract level. In addition to the new loss data, the empirical work also leverages emerging tools in spatial analysis, including high-resolution aerial imagery and precise "rooftop" geocoding of structure locations.

The empirical design leverages rich variation in building code requirements

4. For example, efforts to adopt statewide wildfire building standards in Oregon and Colorado have failed politically (Sommer 2020).

across space and over time. The complex nature of building regulation in California creates a patchwork of wildfire standards across localities. We also observe fires in other states that do not have wildfire building codes. In all of these places, we observe homes built before and after changes in California's codes. This identifying variation yields credible counterfactual predictions for how homes would have performed in the absence of California's standards. Our preferred statistical model is a fixed effects regression that compares the likelihood of survival for homes of different vintages on the same residential street during the same wildfire event. These street fixed effects allow us to compare groups of homes that experience essentially identical wildfire exposures.

We find remarkable vintage effects for California homes subject to the state's wildfire standards. A 2008 or newer home is about 16 percentage points (40%) less likely to be destroyed than a 1990 home experiencing an identical wildfire exposure. There is strong evidence that these effects are due to state and local building code changes - first after the deadly 1991 Oakland Firestorm, and again with the strengthening of wildfire codes in 2008. The observed vintage effects are highly nonlinear, appearing immediately for homes built after building code changes. There are no similar effects in areas of California not subject to these codes or in other states that lack wildfire codes.

We also find that code-induced mitigation benefits neighboring homes, consistent with reduced structure-to-structure spread. These neighbor effects are in keeping with anecdotal reports of home-to-home spread as a factor in urban conflagrations (Cohen 2000; Cohen and Stratton 2008; Cohen 2010).[5] Our results imply that, all else equal, code-induced mitigation by a neighbor located less than 10 meters away (within the distance fire experts refer to as the home ignition zone) reduces a home's likelihood of destruction during a wildfire by about 2.5 percentage points (6%). This benefit is even larger when homes have multiple close neighbors.

5. We are also aware of at least one insurance company which will not sell homeowners insurance to homes located next to a home with a wood roof in high-risk areas (Allstate Indemnity Company 2018).

Finally, we embed our estimates of building code benefits in an economic model and calculate the approximate net social benefits of such a policy for a random sample of California homes in wildfire hazard areas. Like other disaster risks, many homeowners are only partially insured (or in the extreme, wholly uninsured) against the full cost of replacing a structure destroyed by wildfire (Klein 2018; California Department of Insurance 2018). This means that the benefits of building codes include not only reductions in expected losses but also additional insurance value due to reduced household exposure to uninsured risk. Our calculations find that wildfire building codes deliver unambiguously positive benefits in the most fire-prone areas of the state, especially where homes are clustered closely together and thus create large risk spillovers. In areas with more moderate wildfire risk, building standards for new homes can also be justified given reasonable assumptions about household risk aversion, future increases in wildfire hazard, and/or co-benefits of building codes (such as reductions in public expenditures on wildland firefighting). On the other hand, the costs of retrofitting existing homes to meet current wildfire building standards are substantial and our analysis suggest full retrofits are only economic in areas with extreme wildfire hazard.

These results are broadly relevant to natural disaster management. In this important setting, a standards-based approach achieved substantially greater compliance with risk mitigation practices. The policy nearly halves loss risk when structures are exposed to the hazard. Moreover, a cost-benefit calculation implies that low takeup in the absence of standards is likely driven by market failures as opposed to a lack of cost-effectiveness. These facts can inform policies to mitigate other risks like floods, hurricanes, tornadoes, and heat waves, where voluntary takeup of adaptation investments also appears to be limited.

This work also has immediate implications for wildfire policy. Our results imply there are gains to be realized from strengthening building codes in other states and countries to match California's. This evidence is relevant to current

proposals in Oregon, Washington, and other states.[6] Meanwhile, California is moving to expand the geographic coverage of designated wildfire hazard zones and reduce the ability of local jurisdictions to opt out of recommended standards.[7] Separately, new California legislation from 2020 provides financial incentives for retrofits of existing homes in wildfire-prone areas.[8] The law specifically calls for support of "cost effective" retrofits, a concept for which the evidence in this study is essential. Additionally, policymakers are confronting pressing issues of insurance rate reform in response to mounting wildfire losses. One key debate is the degree to which individual investments improve structure survival and should thus be rewarded through regulated insurance discounts (California Department of Insurance 2018). This paper's evidence on the effectiveness of such investments during real wildfires bears directly on this question.

Our work builds on previous studies of natural hazard mitigation. For wildfires, a number of engineering and forestry studies describe the effects of construction materials and vegetation management on structure resilience (Gibbons et al. 2012; Syphard et al. 2012; Syphard, Brennan, and Keeley 2014; Alexandre et al. 2016; Syphard, Brennan, and Keeley 2017; Kramer et al. 2018; Syphard and Keeley 2019). Our paper focuses on the effects of a mandatory mitigation policy, while these previous studies measure technology effectiveness (i.e., survival of homes whose owners did vs. did not choose to take mitigation measures). Two studies on the related topic of hurricanes do consider building codes, with conflicting results. Dehring and Halek (2013) is a small case study of several hundred homes during Hurricane Charley in 2004. Simmons, Czajkowski, and Done (2018) study aggregate zip-code level data on annual insurance claims by homes built in different decades to infer benefits of hurricane building codes in Florida. In contrast, our study uses highly

6. See, e.g., Profita, Cassandra. "The Labor Day Fires Burned Towns and Homes. Oregon Has a Plan to Avoid a Repeat." Oregon Public Broadcasting, September 7, 2021.

7. S.B. 63, 2021–2022, California. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB63.

8. A.B. 38, 2019–2020, California. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB38.

granular property- and event-level loss data for a large sample of wildfires covering several states. Across a range of natural hazards, a parallel engineering literature attempts to calculate the value of building codes through modeling and simulation (e.g. Federal Emergency Management Agency 2020). Finally, our work is methodologically related to a separate literature in economics on building codes and household energy consumption (Jacobsen and Kotchen 2013; Levinson 2016).

This study makes five contributions. First, we provide the first comprehensive evaluation of the effects of wildfire building codes on structure survival. Beyond the wildfire context, this result improves our understanding of disaster resilience under standards-based vs. voluntary policies. Second, we provide the first empirical estimates of the spillover benefits of wildfire mitigation investments to neighboring properties. Third, we compile a comprehensive dataset of structure-level outcomes in wildfires across several states that, to our knowledge, is the most complete accounting in existence. This new dataset will enable future work on the economics of catastrophic wildfire risk. Fourth, we approach the topic in a causal framework with an explicit empirical design, where previous work is primarily descriptive or relies on regression adjustment. Finally, we embed the empirical estimates in an economic model to calculate net social benefits that account for local hazard, neighbor externalities, and household risk aversion.

The rest of the paper proceeds as follows. Section 1 discusses structure survival in wildfires and California's history of building code updates. Section 2 describes the data and spatial analysis. Section 3 outlines the empirical strategy, and Section 4 presents the results. Section 5 develops the model of net social benefits and Section 6 concludes.

1 Wildfire Building Codes in California and Other States

> *"Unlike a flash flood or an avalanche, in which a mass engulfs objects in its path, fire spreads because the requirements for com-*

> *bustion are satisfied at locations along the path... A wildland fire cannot spread to homes unless the homes and their adjacent surroundings meet those combustion requirements."* Jack D. Cohen, *Journal of Forestry*, 2000.

Established forestry and engineering evidence supports the importance of the so-called home ignition zone in determining structure resilience to wildfires. The home ignition zone includes the design of the home itself as well as an imagined area extending 30 meters away from the structure. Fire scientists emphasize the elimination of flammable materials inside this zone (e.g., Cohen 2000, 2010; Calkin et al. 2014). This guidance applies to both vegetation around the home ("defensible space") and the construction of the home itself, especially the roof.

Among U.S. states, California has gone the furthest in mandating takeup of wildfire resilience investments by property owners. However, the application of these codes varies throughout the state. In areas where CAL FIRE provides firefighting services (State Responsibility Area or SRA), the state directly determines building standards. Within incorporated cities and other areas with their own fire departments (Local Responsibility Area or LRA), local governments have historically had greater control over code requirements.

The development of the modern standards began with the Oakland Hills Firestorm of 1991, which killed 25 people and caused $1.5 billion in property damage. The tragedy led to a series of legislative actions during the mid-1990s that required more fire-resistant roofing and maintenance of vegetation immediately adjacent to the home. The first of these was the so-called Bates Bill of 1992 (Assembly Bill 337). Among other changes, the Bates Bill encouraged stronger building standards in LRA areas by requiring CAL FIRE to produce maps of recommended Very High Fire Hazard Severity Zones (VHFHSZ). In LRA areas, local governments could then choose whether or not to adopt these recommended hazard maps (and thus the accompanying building standards). This designation process unfolded over several years, with hundreds of local governments adopting or rejecting CAL FIRE's proposed VHFHSZ maps at

different times. According to Troy 2007, 151 of 208 local governments (73%) either adopted the VHFHSZ regulations or claimed to have promulgated equally strong existing rules.[9]

On the heels of the Bates Bill, Assembly Bill 3819 of 1994 increased requirements for ignition-resistant roofs. These requirements applied in all SRA areas and in the subset of LRA areas where local governments had adopted recommended VHFHSZs. Roofing materials are rated Class A, B, C, or unrated.[10] Starting in 1995, the law required Class B roofs on newly-constructed or reroofed homes in regulated areas. In 1997, the requirement increased to Class A roofs in high-hazard areas (a substantial improvement in fire resistance). Finally, Assembly Bill 423 in 1999 simplified enforcement of the new roofing codes by outlawing the use of unrated roofing materials throughout the state.

The collective effect of these mid-1990s building code reforms was to substantially increase the fire resistance of roofs on newly-constructed homes in regulated areas after about 1997. The roofing requirements also applied to existing homes, but only at the time of roof replacement. Any homeowner in a regulated area who replaced more than 50% of the roof surface in a single year was in principle obligated to comply. The defensible space provisions also applied to existing and new homes. However, in practice, the primary point of enforcement for these codes was at the time of new construction; enforcement effort for existing homes was limited (see e.g., Maclay 1997).

California strengthened its wildfire codes again in 2008 with the so-called Chapter 7A standards of the California Building Code. These requirements apply to all homes built in 2008 or later in SRA areas and in LRA areas where proposed VHFHSZ designations have been accepted. The codes apply to many dimensions of new homes. Roofs must be rated class A or B, eaves

9. For a detailed qualitative study of the determinants of local VHFHSZ adoption decisions, see Miller, Field, and Mach (2020).

10. These ratings are earned through laboratory testing; for example, the Class A test involves placing a 12-inch by 12-inch burning brand on the roof material under high wind conditions. The material must not ignite for 90 minutes.

and exterior siding must be fire resistant, vents must covered by a fine wire mesh to resist ember intrusion, windows and doors must resist fire for at least 20 minutes, and decks and other building appendages must be built of non-combustible materials. Chapter 7A also includes additional requirements for defensible space.

The damage data collected for this study also include wildfires in Arizona, Colorado, Oregon, and Washington. None of these had statewide wildfire building standards at the time of the included fires (Insurance Institute for Business and Home Safety 2019). Some local governments – particularly in Colorado – have adopted local standards that include a diverse mix of rules about roofs, other construction materials, and/or defensible space. Our empirical analysis excludes a small number of fires in the comparison states that overlap areas known to have local wildfire building standards.[11]

While the non-California homes in this study are not subject to mandatory standards, they are targeted by a range of information and incentive programs that seek to increase voluntary home hardening. Programs active in these states include FireWise USA (National Fire Protection Association), the Community Wildfire Protection Plan program (United States Forest Service and Department of Interior), the Fire Adapted Communities Coalition (numerous public agencies and NGOs), the Ready, Set, Go! program (International Association of Fire Chiefs), and numerous other initiatives.

2 Data and Spatial Analysis

This section describes the construction of the database of wildfire damages, property tax assessment information, and structure locations.

11. These are the 2012 Waldo Canyon Fire, 2013 Black Forest Fire, and 2018 Mile Marker 117 Fire in El Paso County, Colorado (Quarles et al. 2013) and the 2012 High Park Fire and 2020 Cameron Peak Fire in Larimer County, Colorado (Larimer County 2020).

2.1 Homes and Damage Data

Damage Inspection Data

We sought to assemble as comprehensive a database as possible of administrative records for homes destroyed or damaged by wildfire in the United States. For recent wildfires in California, this information is managed by CAL FIRE. For earlier California fires and for fires in other states, we contacted individual county assessors (who track these damages in order to update property tax assessments) and other agencies to request historical records of structure damages. To our knowledge, the resulting database is the most complete accounting that exists of U.S. homes lost to wildfire.

California 2013–2020: In California, the CAL FIRE Damage Inspection (DINS) database is a census of destroyed and damaged homes following significant wildfire incidents during 2013–2020. The data include street address and assessor parcel number (APN); limited structure characteristics; and for some fires, an additional sample of undamaged homes. The damage variable has four levels: destroyed ($>$ 50% damage), major (26–50%), minor (10–25%), and affected (1%–9%). Of these, "destroyed" is the most commonly reported damage category and the only category that appears consistently across all fires. The lack of partially-destroyed structures is consistent with case study observations in Cohen (2000) and subsequent research. We thus follow the literature and focus on "destroyed" as our primary outcome.

California 2003–2013: Data for pre-2013 wildfires in California come from two sources. For the 2003 and 2007 San Diego fire storms, we received damage assessment data from San Diego County. For other counties, CAL FIRE staff provided us with a large collection of unformatted historical damage assessment reports that we compiled and standardized to be usable for research.

Other States: Using ICS-209 incident reports, we identified the 15 counties in states other than California with the greatest number of structures lost to wildfire since 2010. We then contacted county assessors in each of these

counties to request damage data. We have successfully received structure-level damage data from 11 of these 15 counties.

Appendix Table 6 includes the full list of wildfires in the dataset.

Property Tax Assessment Data

We merge the damage records to comprehensive assessment data for all U.S. homes from the Zillow ZTRAX database. The ZTRAX data include information on year built, effective year built (in the case of remodels), building square footage, and other property characteristics. The merge from damage data to ZTRAX uses assessor parcel numbers, and we validate the accuracy of this merge by comparing street addresses across the two datasets. We restrict the data to include only single family homes, which account for most properties inside the wildfire perimeters in our sample. For each incident, we merge the damage data to the most recent historical assessment data from the pre-fire period. In other words, we merge to the population of single family homes that existed immediately prior to the start of the fire. Appendix Table 6 shows the number of single family homes inside of each wildfire perimeter and the share destroyed.

2.2 Spatial Analysis and Dataset Construction

Identifying Structure Rooftop Locations

This study uses the physical locations of the homes in the data in two ways. First, homes must be spatially assigned to building code jurisdictions and to wildfire burned areas. Second, the measurement of spillovers across properties requires precise distances between neighboring structures. The street address-based geocoding methods typically used in academic research are not sufficiently detailed for this second purpose, which requires accurate structure locations at a meter scale. We solved this challenge by combining several spatial datasets to identify precise rooftop locations. First, we limit the population of ZTRAX homes to all homes in zip codes where at least one home was destroyed. We then merge these ZTRAX records to parcel boundary maps

from county assessors using assessor parcel numbers. This yields a parcel polygon for each home. We then use comprehensive building footprint maps from Microsoft to identify the largest structure overlaying each parcel.[12] We call this location the "footprint location." Figure 1 shows an example for Redding, California in the area of the 2018 Carr Fire. Gray lines are parcel boundaries from the Shasta County Assessor. Blue polygons are building footprints. The purple and yellow markers show the assigned rooftop locations for each structure. Yellow markers show homes that are reported as destroyed in the damage data.

This rooftop geocoding method generates highly accurate locations, but it is dependent on the availability of high-quality parcel boundary GIS data. In areas where such data are not available (representing 13% of homes in the final analysis dataset), we instead geocode home locations using the ESRI StreetMap Premium geolocator, a commercially-available address-based product. Our quality checking shows that these locations (henceforth "address-based locations") are generally reliable to the parcel level but not always to the structure rooftop level. Appendix Section C describes the geocoding in more detail.

Validating Locations and Damage Reports

We quality check the calculated property locations and the damage report data using high-resolution aerial imagery from NearMap. The base image in Figure 1 shows an example. The detailed imagery allows us to manually confirm the accuracy of structure locations, which closely coincide with the blue building footprints in the figure. In addition, the NearMap imagery includes post-fire surveys for many of the incidents in our database. Figure 1 illustrates how destroyed properties are readily visible in these surveys, which allows us to confirm the accuracy and completeness of the damage data. Appendix Table 4 reports accuracy rates in a random sample of homes. For damage reports, 99%

12. The Microsoft U.S. Building Footprints Database is publicly available at https://github.com/microsoft/USBuildingFootprints.

of reported outcomes match the ground truth imagery. For rooftop locations, 98% of the assigned structure locations are on top of the structure rooftop in the ground truth imagery (with 99%+ accuracy in densely developed areas). Locations that rely on street address based geocoding tended to be accurate to the parcel but not always to the actual structure rooftop – about 75% of these assigned locations are on top of the structure rooftop in the ground truth imagery.

Spatial Merge to Wildfire Perimeters and Code Jurisdictions

We restrict the dataset to homes located within final wildfire perimeters (plus a 20-meter buffer). Depending on the state and time period, these digital perimeter maps come from the California Forest and Range Assessment Program (FRAP), the Monitoring Trends in Burn Severity (MTBS) dataset, or the National Interagency Fire Center (NIFC). We merge the homes data to spatial data on fire protection responsibility (SRA vs. LRA) and designated fire hazard (FHSZ) that together determine building codes in a given location in California. We use historical GIS maps provided by CAL FIRE to assign homes to code regimes according to the codes in effect when the home was built.[13]

Calculating Distances Between Neighboring Homes

We construct two measures of distance between homes. The first is the minimum distance between the building footprint polygons associated with the two structures (henceforth the "wall-to-wall" distance). This measure is only available for homes where we assign locations based on building footprints. The second metric uses the distance between assigned point locations, which are available for all homes in the dataset. We call this metric the "centroid to centroid" distance because these points are meant to correspond to the center of the roof. The wall to wall distance is our preferred measure because it more

13. For SRA/LRA boundaries, the historical map data include updates in 1990, 1996, 2003, 2005, and annually from 2010–2020. For FHSZ, the historical map data include updates in 1985, 1998, 2007, and 2008.

accurately captures space between homes and because the footprint-geocoded locations are more accurate than the address-based location points (Appendix Table 4). Our main estimates of neighbor spillovers use the restricted sample of homes for which wall to wall distances are available. For robustness, we also show specifications that use centroid to centroid distances and the full sample of homes.

We identify up to 15 nearest neighbors within one kilometer for each home in the final dataset. Panel (b) of Figure 1 shows two examples. Each image shows wall-to-wall distances (in meters) from the structure marked "0". Appendix Table 2 summarizes the distribution of number of neighbors at various distances.

Data Summary

The final dataset includes 55,408 single family homes exposed to 112 wildfires in California, Arizona, Colorado, Oregon, and Washington between 2003 and 2020. Thirty-nine percent of these were destroyed. Appendix Figure 1 shows the distribution of year built and fraction destroyed by year built for the full dataset. Appendix Table 6 reports the number of exposed and destroyed homes for each fire.

3 Empirical Strategy

This section describes the empirical design used to measure the effect of wildfire building codes on structure survival. To fix ideas, Figure 2 provides an example of the merged dataset for the 2018 Woolsey Fire in Los Angeles County. The green and purple markers indicate locations of surviving and destroyed single family homes inside the final fire perimeter. The street map data give a sense of development density. The intensity of losses varies significantly within the burned area. Near Malibu, a large share of affected homes were lost. Further north, however, there are several areas where most homes inside the fire perimeter escaped destruction. These differences reflect varying fire

conditions, firefighter response times, landscape vulnerability, structure characteristics, and potentially numerous other factors. This heterogeneity adds noise to empirical analysis of structure survival. It may also introduce bias if year built or other structure traits vary similarly within burned areas. We address these challenges using an empirical design that compares the likelihood of survival for homes of different vintages on the same residential street during the same wildfire. We attribute these vintage effects to building codes by comparing vintage effects across jurisdictions with and without wildfire building codes.

3.1 Treatment Groups

Throughout the rest of the paper, we consider three types of jurisdiction. The first is SRA, where compliance with California building codes was mandatory. The second is LRA areas that were ever recommended by CAL FIRE as VHFHSZ areas (henceforth, "LRA-VHFHSZ"). To be clear, this group includes all proposed VHFHSZ regardless of whether local governments accepted the designation. There is no centralized database that records local VHFHSZ adoption decisions, but Troy (2007) reports high rates of adoption.[14] The final treatment group is areas without wildfire building codes (henceforth, "no-codes"). This includes LRA areas in California that were never recommended for consideration as VHFHSZ, as well as fires in areas of Arizona, Colorado, Oregon, and Washington without any state or local wildfire building codes. Appendix Table 1 reports the number of homes in each treatment group.

14. In addition, historical news accounts show that cities that rejected the official VHFHSZ designation often still adopted the underlying code requirements in the recommended areas. This seems to have been an attempt to achieve the state-recommended resilience requirements while avoiding the VHFHSZ label due to fears about property values (Sullivan 1995; Snyder 1995; Stewart 1995; Yost 1996; Grad 1996). One state fire official's response: "We didn't care if they called it a nuclear-free zone, as long as they adopted the regulations" (Maclay 1997).

3.2 Own-structure survival

Event study figures

We begin the regression analysis with the following event study-style model for home i on street s exposed to wildfire incident f. We estimate this model separately for the SRA, LRA-VHFHSZ, and no-codes groups.

$$1[Destroyed]_{isf} = \sum_{v=v_0}^{v=V} \beta_v D_i^v + \gamma_{sf} + X_i\alpha + \epsilon_{isf} \tag{1}$$

The outcome variable is equal to one for destroyed homes and zero otherwise. The V variables $D_i^{v_0}, ..., D_i^V$ are indicator variables equal to one if house i's year built falls into bin v. The main parameters of interest are the coefficients β that correspond to these vintage bins. These give the effect of each vintage on probability of survival when exposed to wildfire. The street fixed effects γ_{sf} include separate indicator variables for each street name-zip code combination within fire perimeter f. These fixed effects sweep away arbitrary patterns of damage across streets within the fire perimeter, so that the model is identified by average differences in survival between homes of different vintages on the same street. We also estimate models with finer and coarser fixed effects, including models with incident instead of street fixed effects.

The additional control variables X_i include controls for wildfire vulnerability at the home site. These include ground slope, aspect, and vegetation type from LANDFIRE (Rollins 2009). Some specifications also include property characteristics (lot size, building square footage, number of bedrooms).

Difference in differences

We summarize the overall effects of the wildfire building standards using a difference-in-differences (DiD) model that pools jurisdictions and time periods. We divide the sample into 3 time periods: before 1998; 1998–2007; and 2008 onwards. The latter two periods correspond to the end of the mid-1990s roofing

reforms and the introduction of the Chapter 7A requirements.

3.3 Structure to structure spread

To measure the effect of code-driven mitigation on likelihood of structure-to-structure spread, we estimate the effect of building vintage on likelihood of survival for neighboring homes. Our regression models are of the form,

$$1[Destroyed]_{isf} = \sum_{j=1}^{J} \rho_j NoCode_j + \sum_{j=1}^{J} \phi_j Code_j + \sum_{v=v_0}^{V} \beta_v D_i^v + \gamma_{sf} + X_i\alpha + \epsilon_{isf} \tag{2}$$

Like Equation (1), this specification controls for own year of construction and street-by-incident fixed effects. The additional regressors $NoCode_j$ and $Code_j$ are the number of neighbors within various distance bins j that were built before and after wildfire building codes. Homes are considered post-code in 1998 in SRA areas and in the year the area was first recommended as a VHFHSZ in LRA VHFHSZ areas. The coefficients ρ_j and ϕ_j for $j = 1, ..., J$ give the effect of these neighbors on own-structure survival. Our preferred specification uses 10-meter bins of wall-to-wall distance. For robustness, we also estimate a specification using centroid to centroid distances. With this latter measure, we define the closest bin as 0-30 meters because 30 meters roughly corresponds to 10 meters of wall-to-wall distance.[15] We apply some additional sample exclusions when estimating Equation 2: The sample is restricted to California since we can only reliably calculate footprint locations for California homes. We further drop condominiums and townhomes to focus on detached single family homes.

This regression identifies the causal effect of code-induced mitigation by neighboring homes if the code regime for neighboring homes is uncorrelated with other determinants of structure- and neighborhood-level risk. This assumption is bolstered by the street fixed effects, which focus on highly local variation.

15. The median building footprint area in the sample is 260 m^2. A hypothetical circular roof would thus have a radius of 9.1 meters and the centroid-to-centroid distance between two such homes would be 18.2 + wall-to-wall distance.

Intuitively, this specification compares homes on the same street during the same wildfire whose nearest neighbors were built in different years. One might still worry, however, that even within these narrow comparisons and even after controlling for own age, the age of a home's neighbors may still be correlated with other wildfire risk factors. We address this concern by exploring estimates for homes located slightly further away as a placebo check. Properties located 50 to 100 meters away are outside of the 30-meter home ignition zone and so present more limited direct ignition threat, but should otherwise be subject to the same potential omitted variables as directly adjacent homes.

4 Results and Discussion

4.1 Own-structure survival

4.1.1 Graphical Evidence

Figure 3 shows the raw mean of *Destroyed* for State Responsibility Area homes according to year of construction. About 35% of exposed homes built prior to the mid-1990s were destroyed. These destruction probabilities begin to fall for homes built after the mid-1990s, decreasing quickly to about 20%. This sharp improvement in resilience corresponds in time to the post-Oakland Firestorm building reforms.

There is also some evidence in Figure 3 that homes built before about 1980 may be less likely to be destroyed than homes built just prior to the roof requirements. This may reflect the fact these older homes are more likely to have been re-roofed at least once after the mid-1990s and complied with the requirement for ignition-resistant materials at roof replacement. This pattern would imply a replacement cycle of about 30-40 years. Actual data on roof service lifetimes is scarce, but this period is within the range proposed by the National Association of Home Builders and other sources (National Association of Home Builders 2007). To the extent that some pre-building code homes may be re-roofed with code-compliant materials, our estimates of building code effects are conservative.

Appendix Figure 2 shows that homes built before and after the building code changes are otherwise comparable. There are no meaningful changes in site-level predictors of fire risk, like ground slope, or in structure characteristics such as building square footage.

Figure 4 presents the event study estimates from Equation (1). The top panel shows homes in SRA, where WUI building codes are mandatory. The markers show estimates and 95% confidence intervals for two-year vintage bins. The omitted bin is 1987-1988, so that these estimates can be interpreted as percentage-point differences in likelihood of destruction relative to a 1987 home. The vintage effects are flat prior to about 1993, and then begin to decrease clearly during the 1995–1999 period. The point estimates suggest additional reductions in loss probability following the adoption of the Chapter 7A codes in 2008, although the small number of homes in those bins leads to somewhat noisy vintage estimates. The overall difference in loss probability between a 1987 home and a 2008+ home is about 15 percentage points.

The middle panel shows homes in LRA areas that CAL FIRE recommended for Very High Fire Hazard Severity Zone designation. These areas again show flat trends in resilience prior to the 1991 Oakland Firestorm and subsequent Bates Bill. After the Bates Bill takes effect, the figure shows steady improvements that persist for about 12 years. The slope of these improvements appears more gradual than in SRA areas, which would be consistent with varied timing of adoption of the recommended codes across hundreds of individual municipalities. The post-2008 estimates are again noisy but imply further improvements in resilience following adoption of the Chapter 7A bulding codes.

Finally, the bottom panel of Figure 4 shows vintage effects for homes in areas not subject to California's codes. This includes fires in areas of Arizona, Colorado, Oregon, and Washington with no state or local wildfire building codes. It also includes LRA areas in California that were never recommended as Very High Fire Hazard Severity Zones. There are relatively few homes in these groups (Appendix Table 1), so we pool them together and use wider ten-year vintage bins to increase precision. Unlike the top two panels, there

is little evidence of improved resilience for homes built since the mid 1990s in areas without wildfire building codes.

4.1.2 Difference-in-Differences Estimates and Robustness Checks

The regression estimates in Table 1 summarize the effects of building code regimes on structure resilience. We show estimates for SRA, LRA-VHFHSZ, and no-codes areas. The various group by time period estimates can be interpreted as percentage point differences in likelihood of destruction relative to the reference category, which is pre-1998 homes in no-code areas. Column (1) shows the results with street by fire fixed effects. The near-zero coefficient on SRA $*$ Before 1998 implies that SRA homes built before the end of the mid-1990s building codes reforms perform similarly to homes of the same vintage in no-code areas. In contrast, SRA homes built during 1998–2007 or 2008–2016 perform 11.2 percentage points and 15.9 percentage points better, respectively. Differencing the pre-post differences across code areas yields a DiD estimate of 13.1 percentage points. The same pattern exists for LRA VHFHSZ areas, with no difference before 1998 and substantial improvements in the post-code periods. The DiD estimate for LRA VHFHSZ areas is 12.2 percentage points. Lastly, these improvements are smaller or absent in the no-codes comparison group, where homes built in the latter two time periods show only minor improvements that are not statistically distinguishable from zero. This is further evidence that the improvements in the code areas are due to building codes as opposed to other time-varying factors. The regression also includes controls for topography and vegetation. As expected, slope steepness at the home site increases vulnerability. A home on a 10 degree slope would be six percentage points less likely to survive than an otherwise-identical home on flat ground. This specification also includes fixed effects for the dominant vegetation type in the area of the home.[16]

The remaining columns of Table 1 explore alternative specifications. Col-

16. We assign vegetation types as the most common fuel model in a 25-meter radius around the home.

umn (2) adds building characteristics from the assessor data. Building square footage, number of bedrooms, and lot size do not appear to have meaningful effects on survival after controlling for year built and street. Home characteristics data are missing for about 20% of homes, which shrinks the sample in this third column. The final three columns show different sets of fixed effects. Column (3) includes separate fixed effects for each group of 100 adjacent homes on each street (ordered by house number). This specification addresses a potential concern that some streets in the sample include many hundreds of homes. The more granular fixed effects do not materially change the estimates. Column (4) groups homes on the same street and side of the street, assuming that house numbers follow the convention of odd and even numbers on opposite sides. This specification also does not change the results. Finally, Column (5) omits the street fixed effects and instead uses incident fixed effects. These incident dummies absorb fire-specific severity and arbitrary time trends in preparedness, but unlike the street fixed effects they do not adjust for differences between exposed homes within the same wildfire incident. The point estimates are slightly larger in SRA areas and slightly smaller in LRA VHFHSZ areas. Notably, the R^2 with incident fixed effects is smaller than with street fixed effects (0.39 vs 0.63). This difference implies that the street fixed effects remove variation in fire severity and other factors within incidents that might otherwise threaten identification. Nevertheless, the estimates are broadly stable across specifications. None of the estimated effects in Columns (2) through (5) are statistically different from those in Column (1).

In principle, the street fixed effects design could underestimate the effect of building codes due to the spillover benefits that we document in the next section. If code-induced investments also benefit nearby pre-code homes, the difference in outcomes between post-code and pre-code homes will understate the true effect of codes on survival.[17] This attenuation could be exacerbated by street fixed effects, which by construction are focused on homes located relatively close to each other. Such reasoning might lead one to prefer incident

17. This is a violation of the Stable Unit Treatment Value Assumption, or SUTVA (Rubin 1980).

fixed effects. In practice, as we show in the next section, spillovers are highly localized and are small compared to the own-resilience effects. In the spirit of exhaustiveness, Appendix Table 3 investigates the quantitative significance of SUTVA concerns by controlling directly for the number of pre- and post-code near neighbors in the street fixed effects regression. Ultimately, the differences in the estimated building code effects across these approaches – street fixed effects, incident fixed effects, and street fixed effects directly controlling for spillovers – are small enough that the various results are not statistically different.

4.2 Spillovers to neighboring properties

This section discusses the spillover benefits of code-induced mitigation to neighboring homes. Figure 5 shows regression results for Equation (2). The top panel shows effects of the presence of pre-code neighbors at various wall-to-wall distances. One or more pre-code neighbors within 0-10 meters increases own-structure loss probability during a wildfire by about 3 percentage points. These effects attenuate with distance, going to zero at 30-40 meters. Notably, this is the distance that wildfire managers consider to be the home ignition zone - the distance within which flammable material presents a risk of structure ignition (Cohen 2000, 2010; Calkin et al. 2014). The near-zero estimates beyond 40 meters bolster the validity of our research design. If our estimates for the nearest neighbors were biased by omitted predictors of resilience that co-vary within neighborhoods, one would expect that bias to also appear in estimates for homes another few dozen meters away (Figure 1b provides a useful illustration of these small distances).

The bottom panel shows the estimates for post-code neighbors. The confidence intervals for these estimates are wider since we observe fewer post-code homes. However, the point estimates suggest that the presence of close neighbors built under WUI building codes does not increase own-structure loss probability. There is also no implied effect of further-away post-code neighbors on own survival, offering additional placebo evidence to support the identifying

assumptions behind this regression.

Table 2 reports regression estimates for near neighbors that allow effects to vary with the number of neighbors. Column (1) considers neighbors at a wall-to-wall distance of less than 10 meters. A single pre-code neighbor increases own-structure loss risk by 2 percentage points. Two or more pre-code near neighbors increases the effect to 3.1 percentage points. This latter category mostly represents the effect of homes with two neighbors, given that very few homes have more than two neighbors within 10 meters (Appendix Table 2). The estimated effects of nearby post-code neighbors are close to zero. Column (2) shows the same regression using a restricted sample of areas where our measured distances between homes are likely to be particularly accurate. This sample includes denser areas (homes with at least 10 neighbors within a 200 meter radius; see Appendix Table 4) and fires since 2013 (for older incidents, it is more likely that parcel boundaries have changed since the fire). The estimated risk posed by pre-code neighbors is slightly larger in this specification, perhaps due to measurement error in wall-to-wall distances in the full sample. The estimates for post-code neighbors are again zero. As another robustness check, Columns (3) and (4) present similar results based on the centroid-to-centroid distance measure. One pre-code neighbor within 30 meters of centroid distance – roughly equivalent to 10 meters of wall distance – increases own loss risk by 2.6 percentage points, and two or more increases risk by 5 percentage points. Again, the point estimates for post-code neighbors are much smaller and close to zero.

5 Net Social Benefits of Building Standards

The empirical results show that compared to reliance on voluntary action alone, California's wildfire building codes substantially reduced average structure loss risk during a wildfire. They also reduced the risk to a close neighbor's home. Having documented these large resilience benefits, we now embed the results in a simple economic model in order to benchmark the approximate net social benefits of wildfire building codes. We use our estimates to explore

the minimum annual disaster probability at which universal mitigation investment is welfare-improving, given various values of neighborhood density and household risk aversion. This exercise is intentionally simple and abstracts from many theoretical and practical details that warrant investigation in future work.[18]

5.1 An Empirical Model of Hazard Mitigation

N identical individuals own homes in a neighborhood with an annual probability p^F of a disaster. In the event of a disaster, each home i's baseline probability of destruction is p_0^D. Up-front investment in a binary mitigation measure with cost m by homeowner i reduces own loss risk during a disaster by τ_{ii} and also reduces loss risk by τ_{ji} for a subset of neighbors $j \neq i$ (for example, in our application τ_{ji} is non-zero for neighbors within some distance of home i and zero for the remaining homes). Mitigation benefits are additive so that a home's destruction probability during a disaster is $p_i^D = p_0^D - M_i\tau_{ii} - \sum_{j\neq i} M_j\tau_{ij}$, where $M_i \in \{0, 1\}$ is the homeowner's binary mitigation decision. We capture myopia with perceived disaster probabilities $\hat{p}_i^F \leq p^F$. These perceived probabilities vary across households.

Consistent with stylized facts (e.g., Klein (2018)), disaster losses are partially insured: destruction of the home imposes insured losses L^I for the insurer and uninsured losses L^U for the homeowner. We initially assume frictionless property insurance markets that offer coverage at actuarially fair annual premia $k_i = p^F p_i^D L^I$. The coexistence of uninsured risk exposure and actuarially fair premiums reflects uninsurable losses (for example, mental and emotional distress) and/or household myopia. The exposition in this section uses a static model with no discounting. Our actual calculations assume that households discount future costs and benefits at a 5% annual rate.

We define two potential measures of net benefit, *risk-neutral cost effectiveness* and *expected utility benefit*. Risk-neutral cost effectiveness is simply the

18. A more detailed theoretical treatment of private risk mitigation can be found in Costello, Quérou, and Tomini (2017).

difference in expected cost with and without mitigation. Expected utility benefit accounts for additional benefits from reduced exposure to uninsured risk. Appendix Section D presents a sketch of the expected utility model. Actually calculating expected utility requires strong assumptions about households' risk aversion, permanent income, ability to smooth across time periods, and other factors. We focus the derivation in this section on risk-neutral cost effectiveness (hereafter, "cost effectiveness"). We note that cost effectiveness is a lower bound on net benefits as long as homeowners are not risk-loving.

Total expected cost across households is,

$$\sum_{i=1}^{N}[p^F(p_0^D - \sum_{j=1}^{N} M_j\tau_{ij})(L^I + L^U) + M_i m] \tag{3}$$

The social benefit of mitigation by a homeowner is the sum of private and external benefits (reduced loss probability) minus mitigation costs,

$$p^F(\tau_{ii} + \sum_{j\neq i}\tau_{ji})(L^I + L^U) - m \tag{4}$$

In contrast, a homeowner's perceived change in private expected losses with mitigation is,

$$\hat{p}_i^F\tau_{ii}(L^I + L^U) - m \tag{5}$$

The presence of internalities ($\hat{p}_i^F$) and externalities (τ_{ji}) means that Expression (5) is weakly less than Expression (4). If households minimize perceived private expected cost, the voluntary takeup rate will be,

$$\mu = \frac{1}{N}\sum_{i=1}^{N}\mathbb{1}[\hat{p}_i^F\tau_{ii}(L^I + L^U) \geq m] \tag{6}$$

which depends on the distribution of perceived probabilities. Assuming $\hat{p}_i^F$ is independently distributed, total actual expected costs under voluntary takeup are $\sum_{i=1}^{N}[p^F(p_0^D - \sum_{j=1}^{N}\mu\tau_{ij})(L^I + L^U) + \mu m]$.

Now consider a policy requiring mitigation by all households. Total expected

cost is given by setting $M_i = 1$ for all households in Expression (3). The difference in expected cost under the mandate vs. the voluntary regime is,

$$(1-\mu)\Big[p^F[\sum_{i=1}^{N}\sum_{j=1}^{N}\tau_{ij}(L^I + L^U)] - Nm\Big] \tag{7}$$

The Samuelson (1954)-style expression inside the outer brackets is the sum of private and external mitigation benefits minus total mitigation costs. The factor of $(1-\mu)$ reflects takeup by a fraction μ of the population without the mandate. A mandate weakly reduces total expected cost if the social value of mitigation (Expression 4) is positive and strictly increases expected cost if the social value of mitigation is negative.

Before proceeding, it is worth noting some restrictions in this model. We assume additive mitigation benefits. There is some support for this in the data - for example, the approximate linearity of risk spillovers for one vs. two near neighbors in Table 2. A more complex model could instead allow the benefits of mitigation to vary with mitigation effort by others, so that mitigation becomes a strategic game between homeowners.[19] We also assume identical homes and homeowners within the neighborhood and independently distributed perceived disaster probabilities. We explore heterogeneity in fire risk and neighborhood density across neighborhoods (zip codes) in the empirical implementation. Expanding the model to allow for greater heterogeneity within neighborhoods would allow a more nuanced exploration of the distribution of net benefits. We see these extensions as useful areas for future work, but prefer this simple and transparent model for the purposes of benchmarking approximate net benefits.

5.2 Implementation

We implement the model for a random sample of 100,000 homes in 424 California zip codes in wildfire hazard areas. Each zip code is modeled as a separate

19. Shafran (2008) develops such a model for vegetation maintenance in wildfire areas.

neighborhood with its own fire probability and number of close neighbors affected by risk spillovers.

Mitigation Benefits

The empirical results in Section 4 allow us to estimate τ_{ii} and τ_{ij}. The reduced form estimates of the effect of building codes on structure survival can be seen as intent-to-treat estimates of the effect of mitigation investment. Given a rate of voluntary takeup for the bundle of mitigation measures in the building code, the standard Wald estimator gives τ_{ii} and τ_{ij} as the ratio of the reduced form estimates and the difference in takeup rates in the codes and no-codes areas.[20] In the theoretical model, voluntary takeup μ depends on beliefs about fire risk and might thus be expected to vary between neighborhoods. In practice, survey data on voluntary mitigation is scarce and the available data do not allow us to calculate neighborhood-specific voluntary takeup rates. Our base calculation uses a voluntary takeup rate of one-third. Appendix Section E describes how we calculate this takeup rate based on CAL FIRE inspections of destroyed and surviving homes for a sample of recent California wildfires, including caveats about limitations of the data (which is nevertheless the best existing survey evidence for our purposes).

Our reduced form estimate for own survival benefit for SRA homes implies a value of τ_{ii} of 0.195 ($\frac{.13.1}{1-0.33} = 0.195$). For τ_{ij}, our reduced form estimate of neighbor benefits in Table 2 is 2.3 percentage points for neighbors up to 10 meters away in wall-to-wall distance (and close to zero beyond 10 meters). The effect also appears approximately linear in number of neighbors that mitigate, at least over the limited range of number of neighbors that we can observe in the data. Thus, our estimate of τ_{ij} is 0.034 for each neighbor within 10 meters ($\frac{-.0.023}{1-0.33} = -0.034$) and zero for all further-away neighbors.[21]

20. See e.g., Angrist and Pischke (2009) p. 127-133. This calculation assumes perfect compliance by homes subject to codes and a homogeneous effect of mitigation on structure survival.

21. In principle, mitigation at further-away homes also benefits home i through potential "domino effects": a near neighbor becomes less likely to ignite due to action by that neighbor's neighbor. Our estimates imply that these effects are small on average (on the order of

Sampling at-risk homes

Unlike the empirical analysis of building code effects, which uses homes located inside historical wildfire perimeters, the net benefits calculation considers a group of homes sampled randomly from *all* California homes in fire hazard areas. To construct this sample, we start from all California homes in designated wildfire severity zones (SRA or LRA) and filter out zip codes containing fewer than 100 homes. We then randomly draw $min(n, 250)$ homes from each remaining zip code where n is the number of homes in the zip code. This yields a sample of 100,230 homes subject to wildfire building codes in 424 zip codes.

We identify each home's annual wildfire exposure probability p^F using data from the United States Forest Service (USFS) Wildfire Risk to Communities project. This measure captures the annual probability of moderate to severe wildfire exposure (Scott et al. 2020).[22] We also identify each home's number of neighbors within 30 meters of centroid to centroid distance. This roughly corresponds to the number of neighbors within 10 meters of wall-to-wall distance (see footnote 15) and is less demanding to calculate in this new random sample of homes.

Costs and Losses

Our main estimates of mitigation costs come from Headwaters Economics (2018). That study uses construction estimating tools from R.S. Means to calculate the additional cost to build a home that complies with California's Chapter 7A wildfire code. Overall, that study reports zero cost difference between code-compliant and standard designs. This counter-intuitive result arises because one aspect of code-compliant construction (exterior siding) is substantially *less* expensive than standard designs. These savings offset increased costs for roofing, landscaping, and other areas. Our main estimate of

0.034^2).

22. We use the product of Burn Probability (the total annual wildfire probability) and Flame Length Exceedance Probability 4 (conditional on any fire, the probability that the fire will reach moderate or greater threat status).

code compliance costs ignores savings from code-compliant siding on the theory that owners would make this choice even without standards. This gives a cost estimate of $15,660. We also report results using alternative cost estimates from the National Association of Home Builders. Their estimated wildfire code compliance costs for newly-built California homes include a low scenario of $7,868 and a high scenario of $29,429 (Home Innovation Research Labs 2020).[23] Finally, we show a "retrofit" scenario based on Headwaters Economics' estimate of $62,760 to fully replace roofing and exterior walls on an existing home.

Our assumed losses for a home destroyed by wildfire include rebuilding costs, belongings and contents of the home, alternative living costs while the home is rebuilt, and costs for debris removal and hazardous waste cleanup. Rebuilding, contents, and alternative living arrangements costs come from the FEMA Hazus model (Federal Emergency Management Agency 2021). We match as closely as possible the characteristics of the model home used to estimate code compliance costs in Headwaters Economics (2018).[24] We regionally adjust these costs to California using geographic adjustment factors from R.S. Means provided in the Hazus model. The resulting cost of reconstruction and contents losses is $766,725. The Hazus cost for alternative living arrangements and disruption (e.g., moving costs) for 24 months is $61,696. For debris removal (which is borne by homeowners) and hazardous waste cleanup (borne by governments), we add a total of $150,000.[25]

We assume that mitigation investments have a protective lifetime of 40 years.

23. These are costs to meet the International Wildland Urban Interface Code, which is similar to the Chapter 7A code. In the low scenario, we ignore $3,839 of gross savings from code-compliant siding as we do for Headwaters Economics (2018).

24. The model home in Headwaters Economics (2018) is a 2,500 square-foot single-story home with 2-car garage constructed in Montana for $140 per square foot. We use Hazus cost estimates for the same size, number of stories, and garage in the "custom" construction class, the closest corresponding cost category.

25. For cleanup and debris removal costs, see Klein (2018); Lewis, Sukey, "Cleaning Up: Inside the Wildfire Debris Removal Job That Cost Taxpayers $1.3 Billion." *The California Report*, July 19, 2018; and Bizjak, Tony, "State's Effort to Clean Up After the Camp Fire is Off to a Rocky Start", *Sacramento Bee*, January 13, 2019.

In the absence of mitigation investment, the probability of loss when exposed to wildfire for a home with no close neighbors is 44%.[26] Households discount future costs and benefits at 5% per year.

5.3 Results of Net Benefit Calculation

Figure 6 illustrates the results of this calculation. The scatter plot shows zip code-level averages of annual wildfire hazard and number of near neighbors. The wildfire hazard reaches strikingly high levels: several zip codes face annual event probabilities above 2% per year, implying a significant wildfire exposure every 50 years on average. The color scale shows the social benefit of mitigation investment in each zip code following Expression (4). The dashed black line shows a threshold for positive net benefits of building standards. Homes to the right of this line have lower expected costs with mitigation investments than without. The threshold bends to the left as the average number of neighbors increases due to the spillover benefits of mitigation across properties. For a home with zero near neighbors, the break-even annual wildfire hazard is about 0.45%. The break-even annual hazard for a home with 1 near neighbor is 0.39% and for a home with 4 near neighbors it is 0.27%.

These cost effectiveness estimates are a lower bound on the net benefits of universal mitigation. One important reason for this is that many homeowners are substantially underinsured for natural disaster losses. Mitigation investments yield additional welfare benefits by reducing exposure to uninsured risk. Even for properties covered by homeowners insurance, Klein (2018) reports that coverage limits for wildfire-destroyed properties are often up to 50% below actual losses. Table 3 reports break-even annual wildfire probabilities for a home with 1.2 near neighbors (the sample mean) based on the expected utility model in Appendix Section D. Although this model requires additional strong assumptions, these back-of-the-envelope numbers depict how risk aversion might affect program benefits. For example, if code compliance costs $15,660, a homeowner

26. The approximate destruction probability for SRA homes under current codes is $0.4 - .156 = .244$ (Table 1). Combined with the own-structure mitigation effect, this gives the implied loss probability in the absence of mitigation: $.244 + .195 = 0.44$.

with a coefficient of relative risk aversion of 5 and an insurance policy covering two thirds of total losses would be better off investing in mitigation wherever the annual probability of a damaging wildfire exceeds 0.33%.[27]

Table 3 also reports results using other estimates of mitigation cost. The zero net cost estimate from Headwaters Economics (2018) leads to positive benefits for any level of hazard. The two additional estimates from Home Innovation Research Labs (2020) bracket the main cost estimate. Finally, the estimated retrofit cost of $62,760 results in much higher break-even hazard levels for existing homes. This kind of full retrofit to existing homes appears to generate positive benefits only for a handful of areas with extreme fire hazard.

Beyond risk aversion, WUI building codes likely have additional benefits that are not included in our calculations. These include reductions in public expenditures on firefighting during large wildfires (Baylis and Boomhower 2019), reduced demand for public assistance among fire victims (Deryugina 2017), avoided emotional and mental distress, and less need for public safety power shutoffs that interrupt electricity service during high fire-risk periods.[28] Moreover, if imperfections in property insurance markets cause premiums to systematically exceed expected damages, then mitigation becomes more attractive because it reduces the risk which must be insured in the imperfect insurance market. Scientists also agree that annual wildfire probabilities are increasing throughout North America such that net benefits of WUI building codes will grow in the future. On the other hand, a more detailed analysis would need to consider possible heterogeneity in household net benefits. If some individuals have very high perceived private costs of choosing fire resistant materials and landscaping (perhaps due to strong aesthetic preferences), building standards could be costly for these households.

27. Studies of the property insurance market generally report high implied levels of relative risk aversion. Cohen and Einav (2007) and Sydnor (2010) examine deductible choices in auto and homeowners insurance respectively and find double-digit values for the mean household across a variety of specifications. Evidence from other markets suggests values closer to the low single digits (e.g., Gertner 1993; Chetty 2006).

28. For a systematic review of catastrophic wildfire costs, see Feo et al. (2020).

In summary, our empirical estimates and model calculations suggest that wildfire building codes yield unambiguous benefits in the most fire-prone areas of California, especially when homes are clustered closely together such that there are large risk spillovers. For areas with lower fire risk, the sign of net benefits is more sensitive to modeling choices and the assumed co-benefits of building codes. Further work on the cost-effectiveness of wildfire mitigation measures in low- and moderate-risk areas is an important area for additional research.

6 Conclusion

Efficient investment in adaptation is essential in the face of rapidly accelerating disaster losses. Yet takeup of protective technologies and behaviors is thought to be constrained by misperception of risk, insurance market failures, spatial externalities, and other frictions. The pressing question facing researchers and policymakers is how to best respond to these market barriers. One suite of policies focuses on increasing voluntary takeup through information or subsidies. Another option is to override individual decisions and mandate certain investments in hazard areas. These policies may differ substantially in their effects and their political acceptability.

This study contributes evidence on the effects and net economic benefits of a mandatory adaptation policy. We provide the first comprehensive empirical evaluation of California's strict wildfire building codes. The analysis uses a new dataset of property-level data on U.S. homes destroyed by wildfire that was created for this study. The new data combine nationwide property characteristics information with post-fire damage assessment records collected from numerous local and state agencies. This resource has three important advantages: it collects and harmonizes previously disparate damage data; it contains a complete record of homes that survive as well as homes that are destroyed; and unlike data for floods and other losses, it is reported at the individual property level. Beyond this study, the new data will enable additional important research on disaster losses.

The empirical analysis in this study is bolstered by our ability to observe differences in building code regimes over time, across jurisdictions within California, and between California and other states. The empirical strategy isolates the effect of building code changes using a fixed effects design that compares outcomes for pre- and post-code homes on the same residential street. This approach narrows the comparison to homes experiencing essentially identical wildfire exposures.

The results show that compared to reliance on voluntary action alone, California's wildfire building codes reduced average structure loss risk during a wildfire by 16 percentage points, or about a 40% reduction. They also reduced the risk to a close neighbor's home by about 2 percentage points or 6%. These striking results imply materially different levels of resilience in communities with and without such codes. Moreover, the spatial externalities provide a classic rationale for public policy intervention even if homeowners were fully informed and rational about wildfire risk.

Having documented these large resilience benefits, we then show how the empirical results can be embedded in an economic model that accounts for mitigation costs, spatial spillovers, and risk preferences. We use our results and other values from the literature to provide a back-of-the-envelope approximation of the minimum annual wildfire risk at which universal mitigation generates positive net benefits. In the most fire-prone areas of California, the calculation shows large net benefits of building codes for new homes. Given the high cost of fully retrofitting existing homes to modern standards, full retrofits do not pass a benefit-cost test in most areas. An important task for future research is to identify individual low-cost investments that can cost-effectively improve the resilience of existing homes in high hazard areas.

In summary, the data show that an adaptation mandate substantially improved resilience to wildfires and a cost-benefit approximation suggests that low takeup without standards is more likely driven by market failures than by fully-informed individual decisionmaking. These results are immediately applicable to policy debates in the U.S., Canada, Australia, the European

Union, and other jurisdictions that are seeking to respond to escalating wildfire risk. More broadly, these facts should be of interest to policymakers and researchers confronting other hazards like floods, hurricanes, and heat waves where voluntary takeup of self-protective investments seems to be constrained by similar barriers. As climate change continues to increase disaster losses, this type of research on the role of public policy and market incentives in shaping adaptation is increasingly urgent.

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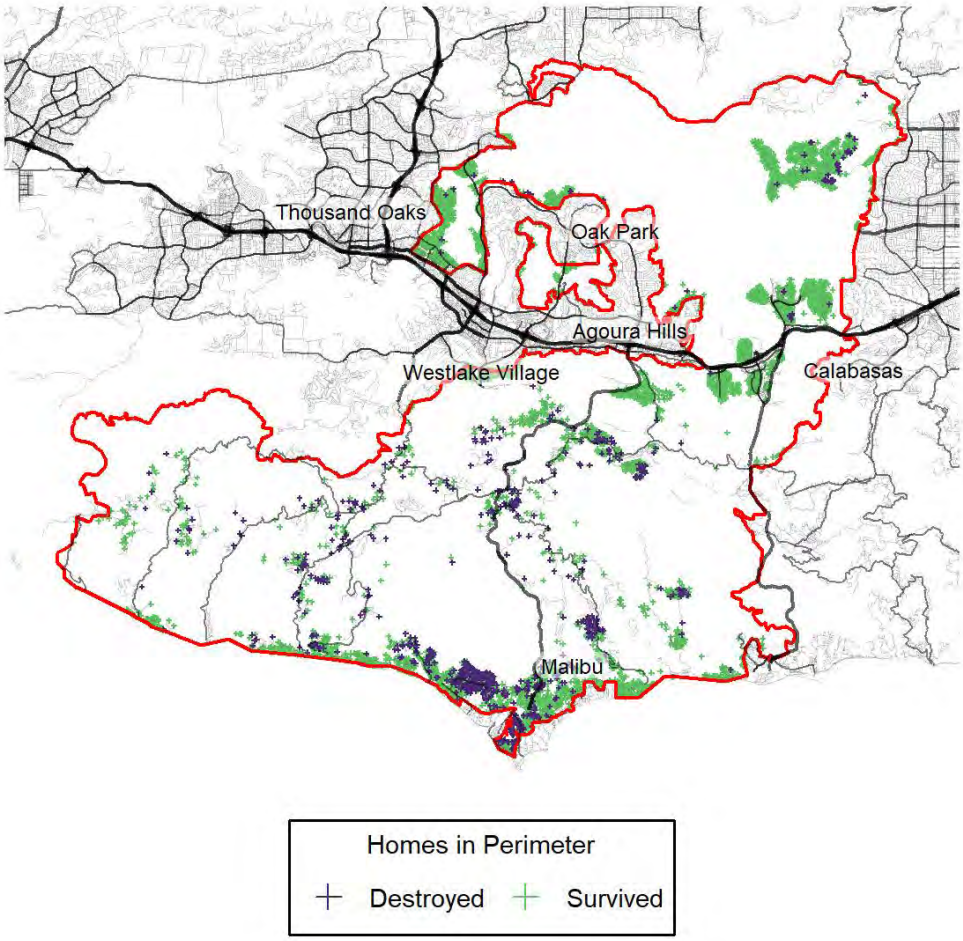
Figure 1: Building and Validating the Dataset

(a) Roof Locations and Damage Reports

(b) Distance Between Structures

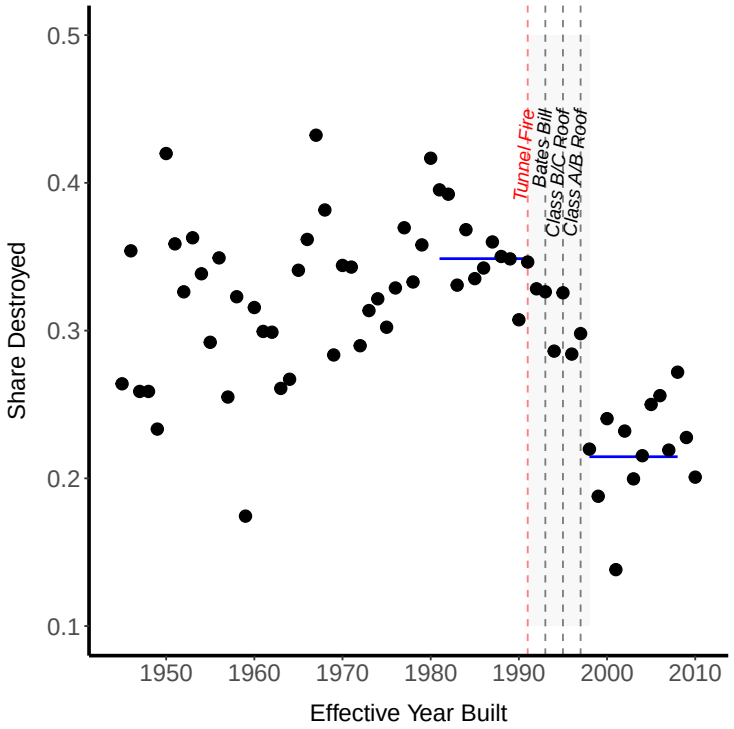
Notes: Best viewed in color. **(Panel a)** Homes affected by the Carr Fire (2018). Markers are geocoded structure locations. Green square markers are structures reported as destroyed in the damage inspection data; yellow circular markers are all other homes in the data. The background image is aerial imagery before and after the Carr Fire from NearMap. Blue building shapes and gray parcel outlines are the building footprint data and assessor parcel boundary data used to identify structure locations (see text for details). **(Panel b)** Examples of calculated distances between structure walls. Images are pre-fire aerial imagery of homes affected by the Thomas Fire (2017) and Tubbs Fire (2017). Figure shows the wall-to-wall distance from the structure marked '0' to the other homes.

Figure 2: Merged data example: Structure-level outcomes in the Woolsey Fire



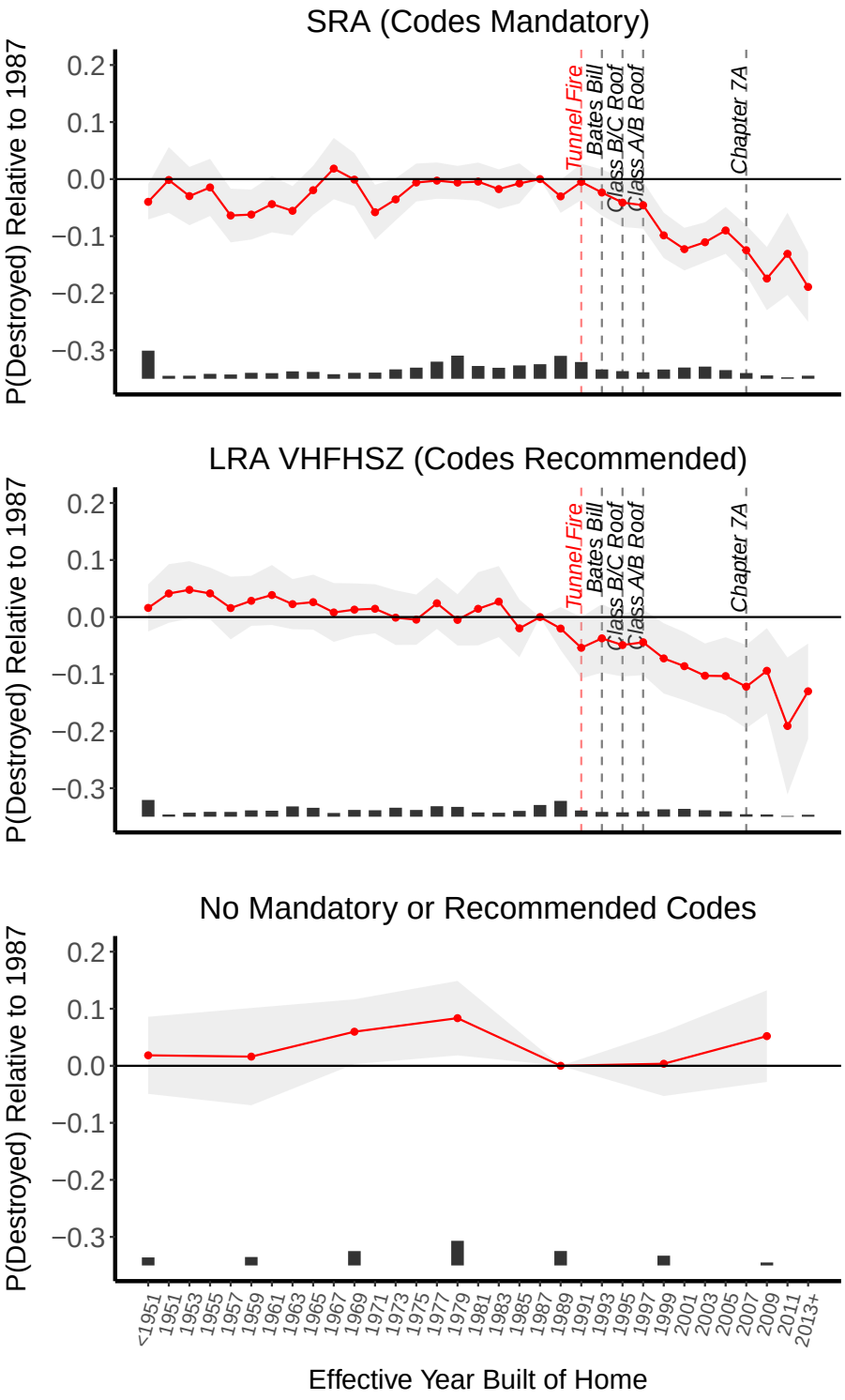
Notes: Best viewed in color. Example of merged inspection, assessor, and fire perimeter data for one fire in our dataset. Markers indicate the locations of single family homes inside the final Woolsey Fire perimeter (shown in red). Purple homes are reported destroyed in damage inspection data; green homes are all remaining homes in the ZTRAX assessment data. Street map data are from Open Street Map.

Figure 3: Share Destroyed by Year Built in Mandatory Code Areas



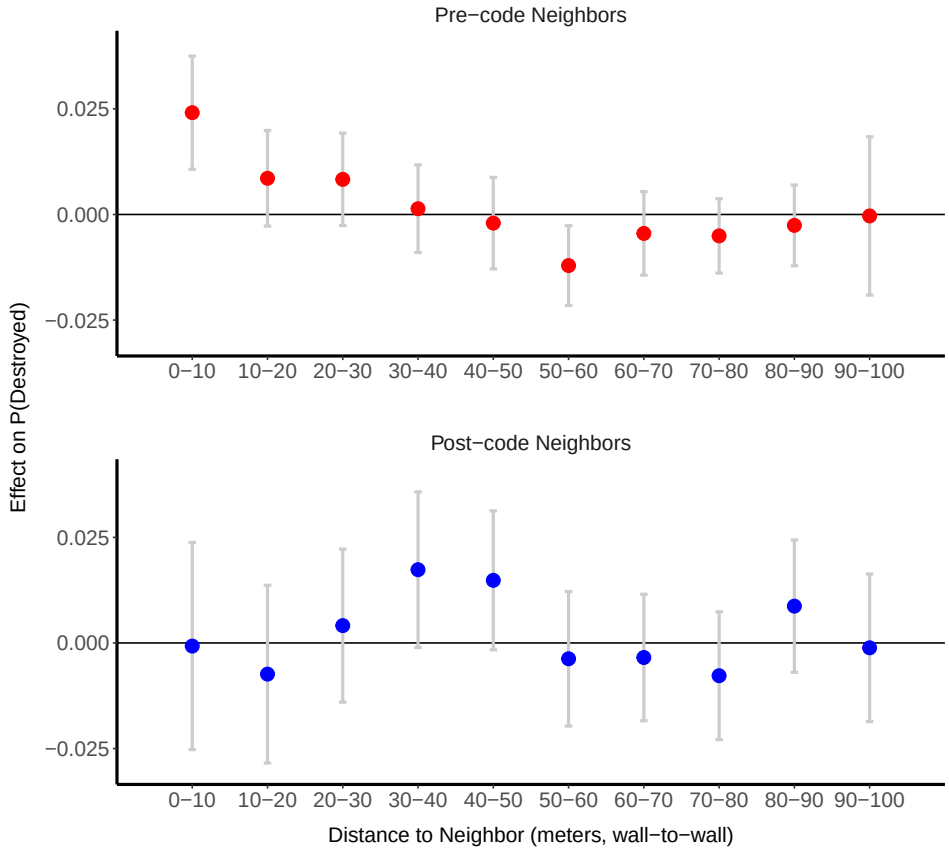
Notes: This figure shows the share of homes inside wildfire perimeters that were destroyed, according to the year that the home was built. The sample is limited to homes in State Responsibility Area. The blue lines show ten-year averages.

Figure 4: Estimated Vintage Effects by Building Code Jurisdiction



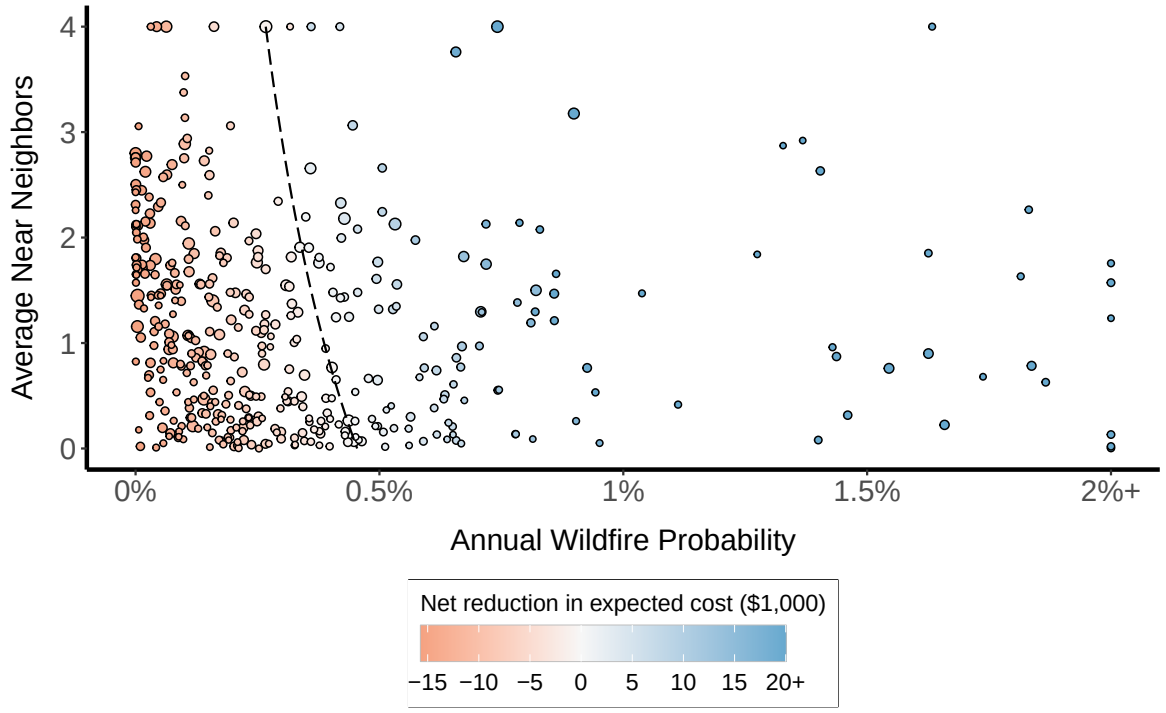
Notes: Figure plots point estimates and 95% confidence intervals from 3 separate OLS regressions of an indicator for Destroyed on bins of effective year built. Each regression includes street by incident fixed effects and other controls described in the text. Panel (a) shows homes in state responsibility area (SRA). Panel (b) shows homes in local responsibility area (LRA) inside state-recommended Very High Fire Hazard Severity Zones (VHFSZ). Panel (c) shows homes in states without wildfire building codes (AZ, CO, OR, WA) and LRA areas in California outside of state-recommended VHFHSZ. Standard errors are clustered by street. The histogram below each panel shows the relative number of observations in each bin.

Figure 5: The effect of neighboring homes on survival



Notes: Figure shows coefficients and 95% confidence intervals from a single OLS regression of "Destroyed" on the presence of pre- and post-code neighbors at various distances. The top panel shows estimates for indicator variables for the presence of one or more neighbors built without wildfire building codes. The bottom panel shows estimates for indicator variables for the presence of one or more neighbors built after wildfire building codes. The regression also includes own year built (in four year bins), street by incident fixed effects, and topographic controls. Distance to neighboring home is wall-to-wall distance. See text for details.

Figure 6: Lower-bound Net Benefits by Fire Hazard and Number of Neighbors



Notes: This figure plots the annual probability of a damaging wildfire and average number of close neighbors for a random sample of 100,230 California homes in areas subject to the Chapter 7A building codes. Markers represent zip-code averages. Marker color indicates average net benefits in the zip code using the cost-effectiveness measure, which is a conservative lower bound on total net benefits. Annual wildfire hazard is from Scott et al. (2020) and represents a snapshot as of 2014. Number of neighbors is the number of homes within a 30-meter centroid to centroid distance. Marker size is proportional to number of homes in the zip code. The dashed line shows a threshold for zero net reduction in expected cost. See text for discussion and alternative scenarios.

Table 1: Regression estimates of building code effects on own survival

	(1)	(2)	(3)	(4)	(5)
SRA * Before 1998	-0.022	-0.045	-0.027	-0.021	-0.029
	(0.033)	(0.041)	(0.029)	(0.037)	(0.020)
SRA * 1998–2007	-0.112***	-0.138***	-0.117***	-0.113***	-0.160***
	(0.034)	(0.043)	(0.031)	(0.039)	(0.022)
SRA * 2008–2016	-0.159***	-0.190***	-0.164***	-0.151***	-0.204***
	(0.036)	(0.044)	(0.033)	(0.041)	(0.027)
LRA VHFHSZ * Before 1998	-0.031	-0.048	-0.038	-0.028	-0.005
	(0.033)	(0.050)	(0.030)	(0.037)	(0.021)
LRA VHFHSZ * 1998–2007	-0.121***	-0.142***	-0.126***	-0.127***	-0.095***
	(0.034)	(0.048)	(0.032)	(0.038)	(0.025)
LRA VHFHSZ * 2008–2016	-0.159***	-0.178***	-0.162***	-0.163***	-0.130***
	(0.037)	(0.050)	(0.035)	(0.041)	(0.030)
No Codes * 1998–2007	-0.038	-0.029	-0.045*	-0.044*	-0.035
	(0.025)	(0.026)	(0.026)	(0.024)	(0.030)
No Codes * 2008–2016	-0.006	0.035	0.012	-0.010	-0.071
	(0.033)	(0.040)	(0.041)	(0.033)	(0.044)
Ground slope (degrees)	0.006***	0.005***	0.006***	0.006***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lot size (acres)		-0.000			
		(0.000)			
Building square feet		-0.000			
		(0.000)			
Bedrooms		0.001			
		(0.003)			
Street FE	✓	✓			
Fuel model FE	✓	✓	✓	✓	✓
Street X 100 homes FE			✓		
Street X side of street FE				✓	
Incident FE					✓
Observations	48,843	38,991	48,843	48,843	48,843
R^2	0.62	0.63	0.63	0.66	0.39
Dep. Var. Mean	0.41	0.46	0.41	0.41	0.41

Notes: Table shows estimates and standard errors from five separate OLS regressions. The outcome variable is an indicator for Destroyed. Street fixed effects includes separate dummies for each street-by-incident. Incident fixed effects are dummies for each wildfire. Fuel model fixed effects are dummies for Anderson fire behavior fuel models. Standard errors are clustered by street.

Table 2: Neighbor Effects

	Destroyed			
	(1)	(2)	(3)	(4)
1 pre-code nearby homes	0.020***	0.023***	0.026***	0.027***
	(0.007)	(0.007)	(0.007)	(0.007)
2+ pre-code nearby homes	0.031***	0.039***	0.050***	0.051***
	(0.009)	(0.010)	(0.009)	(0.009)
1 post-code nearby home	0.001	0.002	0.010	0.001
	(0.013)	(0.013)	(0.012)	(0.013)
2+ post-code nearby homes	-0.001	0.001	0.003	-0.009
	(0.016)	(0.018)	(0.018)	(0.021)
Own Year Built	✓	✓	✓	✓
Topography	✓	✓	✓	✓
Street FE	✓	✓	✓	✓
Observations	38,226	23,564	44,923	26,842
R^2	0.64	0.68	0.63	0.68
Distances	Walls	Walls	Centroids	Centroids
Subsample		✓		✓
Dep. Var. Mean	0.40	0.49	0.40	0.51

Notes: Table shows estimates and standard errors from 4 separate OLS regressions. The outcome variable is an indicator for Destroyed, and each regression also includes dummy variables for own year built (in four year bins) and street-by-incident fixed effects. Columns (1) and (2) use wall-to-wall distances to assign neighbors, while Columns (3) and (4) use the centroid-to-centroid distance measure. Columns (1) and (3) use the full sample of single family homes, while columns (2) and (4) use a subsample in areas where our distance measures are likely to be particularly accurate. See text for details. Standard errors are clustered by street.

Table 3: Break-even Hazard under Risk Aversion and Alternative Costs

	Insured %	100	67		33	
			$\gamma = 2$	$\gamma = 5$	$\gamma = 2$	$\gamma = 5$
Cost Estimate	Source					
New Home						
\$ 0	*HE-Low*	0	0	0	0	0
\$ 4,029	*NAHB-Low*	0.10%	0.09%	0.08%	0.08%	0.05%
\$15,660	*HE*	0.38%	0.36%	0.33%	0.30%	0.20%
\$29,429	*NAHB-High*	0.71%	0.68%	0.63%	0.58%	0.41%
Retrofit						
\$62,760	*HE*	1.50%	1.46%	1.40%	1.33%	1.15%

Notes: Table shows estimated minimum annual wildfire probability for which building standards yield positive net benefits under various assumptions about cost, share of losses insured, and risk aversion. Probabilities are reported as percentages (e.g., 0.32% per year). For partial insurance scenarios, γ is the coefficient of relative risk aversion. Calculations assume 1.2 near neighbors. See text for details of these calculations. Source code HE represents Headwaters Economics (2018) and NAHB represents Home Innovation Research Labs (2020).

City Council
Mayor John W. Minto
Vice Mayor Ronn Hall
Council Member Laura Koval
Council Member Rob McNelis
Council Member Dustin Trotter

CITY OF SANTEE
REGULAR MEETING AGENDA
Santee City Council

City Manager | Marlene D. Best
City Attorney | Shawn D. Hagerty
City Clerk | Annette Fagan Ortiz

Staff
Assistant to the City Manager | Kathy Valverde
Community Services Director | Nicolas Chavez
Finance Director/Treasurer | Tim McDermott
Fire & Life Safety Director/Fire Chief | John Garlow
Human Resources Director | Matt Rankin
Law Enforcement | Captain Michael McNeill

MEETING INFORMATION

Wednesday, June 08, 2022
6:30 p.m.
Council Chambers | Building 2
10601 Magnolia Ave • Santee, CA 92071

TO WATCH LIVE:

AT&T U-verse channel 99 (SD Market) | Cox channel 117 (SD County)
www.cityofsanteeca.gov

IN-PERSON ATTENDANCE

Please be advised that current public health orders recommend that attendees wear face coverings while inside the Council Chambers.

LIVE PUBLIC COMMENT

Members of the public who wish to comment on matters on the City Council agenda or during Non-Agenda Public Comment may appear in person and submit a speaker slip, before the item is called. Your name will be called when it is time to speak.

PLEASE NOTE: Public Comment will be limited to 3 minutes and speaker slips will only be accepted until the item is called. The timer will begin when the participant begins speaking.

ROLL CALL: Mayor John W. Minto
Vice Mayor Ronn Hall
Council Members Laura Koval, Rob McNelis and Dustin Trotter

LEGISLATIVE INVOCATION: Todd Tolson Jr.

PLEDGE OF ALLEGIANCE

ADJOURNMENT IN MEMORY: Todd Jonathan Tolson

CONSENT CALENDAR:

PLEASE NOTE: Consent Calendar items are considered routine and will be approved by one motion, with no separate discussion prior to voting. The public, staff or Council Members may request specific items be removed from the Consent Calendar for separate discussion or action. Speaker slips for this category must be presented to the City Clerk at the start of the meeting. Speakers are limited to 3 minutes.

(1) Approval of Reading by Title Only and Waiver of Reading in Full of Ordinances and Resolutions on the Agenda. (City Clerk – Ortiz)

(2) Approval of Payment of Demands as Presented. (Finance – McDermott)

(3) Adoption of Four Resolutions Calling for a November 8, 2022 General Municipal Election. (City Clerk – Ortiz)

(4) Adoption of a Resolution Awarding the Citywide Roadway Striping and Marking Maintenance Contract to Payco Specialties, Inc. Authorizing Change Orders for Fiscal Year 2022-23, and Approving a Categorical Exemption Pursuant to the Guidelines of the California Environmental Quality Act. (Development Services – Engineering)

(5) Adoption of a Resolution Accepting the Unit III Public Improvements for the Sky Ranch Subdivision (TM 2004-08) Location: Iris Street, Bella Vista Street, Triana Street, Cala Lily Street, Monticello Street and Sevilla Street. (Development Services – Engineering)

(6) Authorize the Sixth Amendment to the Agreement for Audio Visual Services Between the City of Santee and ETS Productions, Inc. in an Amount Not to Exceed $29,232.60. (Community Services – Chavez)

(7) Adoption of a Resolution Authorizing an Agreement for Urban Forestry Maintenance Services with West Coast Arborists Inc. per City of Encinitas Contract for RFP No. 2017-06 and Extension for an All-Inclusive Amount of $163,794.91. (Community Services – Chavez)

(8) Claim Against the City by Maria Blackman. (Human Resources – Rankin)

NON-AGENDA PUBLIC COMMENT (15 minutes):

Persons wishing to address the City Council regarding items not on the posted agenda may do so at this time. In accordance with State law, Council may not take action on an item not scheduled on the Agenda. If appropriate, the item will be referred to the City Manager or placed on a future agenda. This first Non-Agenda Public Comment period is limited to a total of 15 minutes. Additional Non-Agenda Public Comment is received prior to Council Reports.

PUBLIC HEARING:

(9) Public Hearing on and Resolution Adopting the Transnet Local Street Improvement Program for Fiscal Years 2023 Through 2027 and Amending the Capital Improvement Program Budget. (Development Services – Engineering)

Recommendation:
1. Conduct the Public Hearing; and
2. Adopt the Resolution approving the TransNet Local Street Improvement Program and amending the adopted Capital Improvement Program budget.

NEW BUSINESS:

(10) Resolution Repealing Resolution No. 006-2021, which Submitted to the Voters at the November 8, 2022 General Municipal Election the Referendum Against Resolution No. 094-2020. (City Clerk – Ortiz)

Recommendation:
Adopt the Resolution repealing Resolution No. 006-2021.

(11) Review of the Proposed Operating Budget for Fiscal Year 2022-23 and Resolution Establishing a Building Official Salary Band. (Finance – McDermott)

Recommendation:
Review and discuss the Proposed Operating Budget for Fiscal Year 2022-23, provide direction to staff and adopt the Resolution establishing a Building Official salary band.

COUNCIL AGENDA STATEMENT
CITY OF SANTEE

ITEM 10

MEETING DATE June 8, 2022

ITEM TITLE **RESOLUTION REPEALING RESOLUTION NO. 006-2021, WHICH SUBMITTED TO THE VOTERS AT THE NOVEMBER 8, 2022 GENERAL MUNICIPAL ELECTION THE REFERENDUM AGAINST RESOLUTION 094-2020**

DIRECTOR/DEPARTMENT Annette Ortiz, City Clerk

SUMMARY

On September 23, 2020, the City Council adopted several resolutions related to the approval of the Fanita Ranch project ("Project"). These actions included the adoption of Resolution 094-2020, which adopted a General Plan Amendment (Case File GPA2017-2) for the Project. On October 29, 2020, proponents of a Referendum Against a Resolution Passed by the City Council of the City of Santee (Resolution 094-2020), ("Referendum") filed a Referendum petition with the City Clerk's office seeking voter approval to overturn Resolution 094-2020 and thereby rescind the General Plan Amendment. On January 13, 2021, the City Council adopted Resolution 006-2021, which submitted the Referendum to the voters at the November 8, 2022 General Municipal Election.

In October of 2020, a lawsuit was filed challenging the adequacy of the Environmental Impact Report ("EIR") for the Project. On March 25, 2022, the court entered judgment and a writ of mandate (order) directing the City to set aside certification of the EIR and the approvals for the Project, including its General Plan Amendment (Resolution 094-2020). On May 25, 2022, in response to the court order, the City Council adopted a resolution repealing the Project approvals, including Resolution 094-2020. The City Council action thereby rescinded the General Plan Amendment that was the subject of the Referendum.

Because Resolution 094-2020 (the subject of the Referendum) has been repealed, there is no longer any action for the voters to take regarding the repealed General Plan Amendment. Since the Referendum is now a meaningless act, it is appropriate for the City Council to acknowledge this fact by repealing Resolution No. 006-2021. The City Council's action in this regard is consistent with the provisions of Elections Code Section 9241, which permits a city to repeal legislation that is the subject of a qualified referendum petition that is filed to challenge that legislation. If a city repeals the legislation in light of the referendum, the city cannot enact the same or essentially the same legislation for a one-year period. To remain consistent with the Elections Code, the Resolution presented to City Council includes a specific provision that prevents the City from again enacting Resolution 006-2021 or enacting a resolution that is essentially the same for a one-year period.

ENVIRONMENTAL REVIEW

The adoption of this Resolution does not constitute a "Project" under the California Environmental Quality Act pursuant to 15060(c)(3) and 15378(b)(5) since approval of this Resolution does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.

Moreover, pursuant to State CEQA Guidelines section 15061(b)(3), the approval of the Resolution is exempt from CEQA because there is no possibility that it may have a significant effect on the environment.

FINANCIAL STATEMENT

N/A

CITY ATTORNEY REVIEW ☐ N/A • ☐ Completed

RECOMMENDATION

Adopt the attached Resolution repealing Resolution 006-2021.

ATTACHMENT

Staff Report
Resolution with Exhibit A

STAFF REPORT

RESOLUTION REPEALING RESOLUTION NO. 006-2021, WHICH SUBMITTED TO THE VOTERS AT THE NOVEMBER 8, 2022 GENERAL MUNICIPAL ELECTION THE REFERENDUM AGAINST RESOLUTION 094-2020

CITY COUNCIL MEETING
JUNE 8, 2022

A. BACKGROUND

On September 23, 2020, the City Council adopted several resolutions related to the approval of the Fanita Ranch project ("Project"). These actions included the adoption of Resolution 094-2020, which adopted a General Plan Amendment (Case File GPA2017-2) for the Project. On October 29, 2020, proponents of a Referendum Against a Resolution Passed by the City Council of the City of Santee (Resolution 094-2020), ("Referendum") filed a Referendum petition with the City Clerk's office seeking voter approval to overturn Resolution 094-2020 and thereby rescind the General Plan Amendment. On January 13, 2021, the City Council adopted Resolution 006-2021, which submitted the Referendum to the voters at the November 8, 2022 General Municipal Election.

In October of 2020, a lawsuit was filed challenging the adequacy of the Environmental Impact Report ("EIR") for the Project. On March 25, 2022, the court entered judgment and a writ of mandate (order) directing the City to set aside certification of the EIR and the approvals for the Project, including its General Plan Amendment (Resolution 094-2020). On May 25, 2022, in response to the court order, the City Council adopted a resolution repealing the Project approvals, including Resolution 094-2020. The City Council action thereby rescinded the General Plan Amendment that was the subject of the Referendum.

Because Resolution 094-2020 (the subject of the Referendum) has been repealed, there is no longer any action for the voters to take regarding the repealed General Plan Amendment. An affirmative or a negative vote on the Referendum would have no legal effect or purpose because the General Plan Amendment that is its focus does not exist and was repealed in response to the court order. The Referendum is therefore moot.

B. ANALYSIS

The purpose of the Referendum was to ask the voters whether they supported or opposed the approval of the General Plan Amendment. A vote in favor of the General Plan Amendment would have resulted in the approval of the General Plan Amendment and a vote against the General Plan Amendment would have resulted in the repeal of the General Plan Amendment. Because the City Council has repealed the General Plan Amendment, the Referendum has no legal meaning. Rejection of the General Plan Amendment would be meaningless because

the General Plan Amendment has already been repealed. Approval of the General Plan Amendment would similarly be meaningless because the General Plan Amendment has been repealed and the Referendum is not the legal vehicle for voter enactment of a General Plan Amendment. For this reason, the Referendum is legally moot and without purpose.

The law does not require a meaningless act. (Civ. Code § 3532.) Since the Referendum is now a meaningless act, it is appropriate for the City Council to acknowledge this fact by repealing Resolution No. 006-2021. The City Council's action in this regard is consistent with the provisions of Elections Code Section 9241. Elections Code Section 9241 permits a city to repeal legislation that is the subject of a qualified referendum petition that is filed to challenge that legislation. If the city repeals the legislation in light of the referendum, the city cannot consider the same or essentially the same legislation for a one-year period. To remain consistent with the Elections Code, the Resolution presented to City Council includes a specific provision that prevents the City from again enacting Resolution 006-2021 or enacting a resolution that is essentially the same for a one-year period.

C. ENVIRONMENTAL DETERMINATION

The adoption of this Resolution does not constitute a "Project" under the California Environmental Quality Act pursuant to 15060(c)(3) and 15378(b)(5) since approval of this Resolution does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Moreover, pursuant to State CEQA Guidelines section 15061(b)(3), the approval of the Resolution is exempt from CEQA because there is no possibility that it may have a significant effect on the environment.

D. STAFF RECOMMENDATION

Adopt the Resolution repealing Resolution 006-2021.

RESOLUTION NO. __-2022

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTEE REPEALING RESOLUTION 006-2021, WHICH SUBMITTED TO THE VOTERS AT THE NOVEMBER 8, 2022 GENERAL MUNICIPAL ELECTION THE REFERENDUM AGAINST RESOLUTION 094-2020

WHEREAS, on September 23, 2020, the City Council adopted several resolutions related to the approval of the Fanita Ranch project ("Project"). These actions included the adoption of Resolution 094-2020, which adopted a General Plan Amendment (Case File GPA2017-2) for the Project; and

WHEREAS, on October 29, 2020, proponents of a Referendum Against a Resolution Passed by the City Council of the City of Santee (Resolution 094-2020), ("Referendum") filed a Referendum petition with the City Clerk's office seeking voter approval to overturn Resolution 094-2020 and thereby rescind the General Plan Amendment; and

WHEREAS, on January 13, 2021, the City Council adopted Resolution 006-2021, a copy of which is attached hereto as Exhibit A, which submitted the Referendum to the voters at the November 8, 2022 General Municipal Election; and

WHEREAS, in October of 2020, a lawsuit was filed challenging the adequacy of the Environmental Impact Report ("EIR") for the Project, and on March 25, 2022, the court entered judgment and a writ of mandate (order) directing the City to set aside certification of the EIR and the approvals for the Project, including its General Plan Amendment (Resolution 094-2020); and

WHEREAS, on May 25, 2022, in response to the court order, the City Council adopted a resolution repealing the Project approvals, including Resolution 094-2020; and

WHEREAS, the City Council action thereby rescinded the General Plan Amendment that was the subject of the Referendum; and

WHEREAS, because Resolution 094-2020 (the subject of the Referendum) has been repealed, there is no longer any action for the voters to take regarding the repealed General Plan Amendment and therefore the Referendum is moot; and

WHEREAS, the law does not require a meaningless act (Civ. Code § 3532), and since the Referendum is now a meaningless act, it is appropriate for the City Council to acknowledge this fact by repealing Resolution No. 006-2021; and

WHEREAS, the City had a duty to either repeal Resolution 094-2020, submit it to a referendum vote, or take action as otherwise directed by a court; and

WHEREAS, the City has repealed and rescinded Resolution 094-2020 pursuant to the court order; and

RESOLUTION NO. __-2022

WHEREAS, Elections Code Section 9241 provides that if a city repeals the legislation in light of the referendum, the city cannot enact the same or essentially the same legislation for a one-year period, which means that if the City repeals Resolution No. 006-2021, the City cannot again enact Resolution 006-2021 or enact a resolution that is essentially the same, for a one-year period; and

WHEREAS, the adoption of this Resolution does not constitute a "Project" under the California Environmental Quality Act pursuant to 15060(c)(3) and 15378(b)(5) since approval of this Resolution does not have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Moreover, pursuant to State CEQA Guidelines section 15061(b)(3), the approval of the Resolution is exempt from CEQA because there is no possibility that it may have a significant effect on the environment; and

WHEREAS, staff recommends that the City Council adopt this Resolution repealing Resolution 006-2021.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Santee, California, as follows:

SECTION 1. That the City Council hereby finds and determines that the Recitals of this Resolution are true and correct and are hereby incorporated into this Resolution as though fully set forth herein.

SECTION 2. That the City Council hereby repeals Resolution 006-2021 in its entirety.

SECTION 3. That in accordance with Elections Code Section 9241, the City Council is prohibited from again enacting Resolution 006-2021, or taking a legislative action to enact a resolution that is essentially the same, for the period of one year from the date of this Resolution.

SECTION 4. That the City Clerk and City Attorney are authorized, instructed and directed to coordinate with the County of San Diego Registrar of Voters to ensure that the Referendum is removed from the November 8, 2022 ballot.

SECTION 5. That the City Clerk shall certify to the passage and adoption of this Resolution and shall enter it into the book of original Resolutions.

SECTION 6. That this Resolution shall take effect immediately upon its adoption.

RESOLUTION NO. __-2022

PASSED, APPROVED, AND ADOPTED by the City Council of the City of Santee, California, at a Regular Meeting thereof held this 8th day of June, 2022, by the following roll call vote to wit:

AYES:

NOES:

ABSENT:

APPROVED:

ATTEST: **JOHN W. MINTO, MAYOR**

ANNETTE ORTIZ, CMC, CITY CLERK

RESOLUTION NO. __-2022

EXHIBIT "A"

RESOLUTION NO. 006-2021

EXHIBIT A

RESOLUTION NO. 006-2021

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTEE CALLING FOR THE HOLDING OF A GENERAL MUNICIPAL ELECTION ON TUESDAY, NOVEMBER 8, 2022, FOR THE SUBMISSION OF A REFERENDUM AGAINST A RESOLUTION PASSED BY THE CITY COUNCIL OF THE CITY OF SANTEE (RESOLUTION NO. 094-2020), REQUESTING THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN DIEGO TO CONSOLIDATE SAID ELECTION PURSUANT TO SECTION 10403 OF THE ELECTIONS CODE AND SETTING RULES FOR ARGUMENTS AND REBUTTALS FOR AND AGAINST SAID MEASURE, AND PROVIDING DIRECTION TO STAFF REGARDING ALLEGATIONS RELATED TO THE SIGNATURE-GATHERING PROCESS

WHEREAS, on September 23, 2020, the City Council of the City of Santee ("City") approved Resolution 094-2020, which amended the Santee General Plan to change the land use designation for Fanita Ranch from Planned Development to Specific Plan, and made related changes to the text of the Santee General Plan, including to the "Guiding Principles" for the development of Fanita Ranch, a copy of which is attached hereto as Exhibit "A"; and

WHEREAS, pursuant to authority provided by statute, a referendum petition has been filed with the City Council of the City of Santee, California, signed by more than ten percent (10%) of the number of registered voters of the City, to submit to the qualified electors a Referendum Against a Resolution Passed by the City Council of the City of Santee (Resolution No. 094-2020) ("Referendum"), and the City Clerk has examined the records of registration and ascertained that, pursuant to Elections Code section 9114, the petition is signed by the requisite number of voters, and has so certified, and

WHEREAS, the City Council desires to submit Resolution 094-2020 to the voters at the November 8, 2022 General Municipal Election, subject to the reservation of rights in this Resolution; and

WHEREAS, pursuant to Elections Code sections 9285 and 9286, the City Council further desires to establish rules and regulations for the preparation, submittal and printing of arguments and rebuttals for and against the measures described herein; and

WHEREAS, allegations have been made regarding the Referendum proponents' signature-gathering process, and if these allegations are eventually proven to be supported by compelling evidence, there could be implications for the ultimate validity of the Referendum and the placement of the Referendum on the ballot; and

WHEREAS, at this time, neither the City Clerk nor the ROV have identified issues with the Referendum petition on its face; and have therefore, certified the sufficiency of the signatures; and

WHEREAS, future legal processes, which have the ability to look beyond the face of the petition, may reveal different evidence about the signature gathering process, and Council desires to direct the City Attorney, the City Clerk, and the City Manager to

cooperate with elections officials to address the allegations and to bring back additional action to Council as necessary; and

WHEREAS, Council adopts this Resolution pursuant to its mandatory duty to take action regarding the Referendum, but Council desires to reserve its right to reconsider and change this action should the allegations regarding the signature gathering process be proven to be supported by credible evidence.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Santee, California, as follows:

SECTION 1. That pursuant to the laws of the State of California relating to charter cities there is called and ordered to be held in the City of Santee, California on Tuesday, November 8, 2022, a General Municipal Election for the purpose of submitting to the voters Resolution 094-2020.

SECTION 2. That the City Council, pursuant to its right and authority, does hereby order submitted to the voters at the General Municipal Election the following ballot measure relating to the Referendum against Resolution 094-2020:

Shall Resolution 094-2020, adopting an Amendment to the Santee General Plan to change the land use designation for Fanita Ranch from Planned Development to Specific Plan, and making conforming changes to the text of the Santee General Plan, including to the "Guiding Principles" for development of the Fanita Ranch property, which was adopted by the Santee City Council on September 23, 2020, but suspended by referendum petition, be adopted?	Yes No

SECTION 3. That a copy of Resolution 094-2020 is available in the City Clerk's office at 10601 N. Magnolia Avenue, Santee, CA 92071, to qualified voters of the City.

SECTION 4. That the ballots to be used at the election shall be in such form and content as required by law.

SECTION 5. That the City Clerk is authorized, instructed and directed to procure and furnish any and all official ballots, notices, printed matter and all supplies, equipment and paraphernalia that may be necessary in order to properly and lawfully conduct the election.

SECTION 6. Pursuant to the requirements of Elections Code section 10403, the Board of Supervisors of the County of San Diego is hereby requested to consent and agree to the consolidation of said election with the Statewide General Election on Tuesday, November 8, 2022.

SECTION 7. The San Diego County Registrar of Voters is authorized to canvass the returns of the General Municipal Election. The election shall be held in all respects as if there were only one election and only one form of ballot shall be used.

SECTION 8. The City of Santee recognizes that additional costs will be incurred by the County by reason of this consolidation and agrees to reimburse the County for any costs.

SECTION 9. The City Clerk is authorized, instructed and directed to coordinate with the County of San Diego Registrar of Voters to procure and furnish any and all official ballots, notices, printed matter, and all supplies, equipment and paraphernalia that may be necessary in order to properly and lawfully conduct the election.

SECTION 10. The ballots to be used at the election shall be in form and content as required by law. Voters shall vote yes or no.

SECTION 11. The polls for the election shall be open at 7:00 a.m. of the same day of the election and shall remain open continuously from that time until 8:00 p.m. of the same day except as provided in Elections Code section 14401.

SECTION 12. The consolidated election shall be held and conducted in the manner prescribed in Elections Code section 10418.

SECTION 13. That in all particulars not recited in this Resolution, the election shall be held and conducted as provided by law for holding municipal elections.

SECTION 14. That notice of the time and place of holding the election is given and the City Clerk is authorized, instructed and directed to give further or additional notice of the election, in time, form and manner as required by law.

SECTION 15. That the City Clerk shall certify to the passage and adoption of this Resolution and shall enter it into the book of original Resolutions.

SECTION 16. That the City Council hereby authorizes the City Clerk to administer said election and all reasonable and actual election expenses shall be paid by the City upon presentation of a properly submitted bill.

SECTION 17. Arguments and Analysis.

A. The City Council authorizes (i) the City Council or any member(s) of the City Council, (ii) any individual voter eligible to vote on the above measures, (iii) a bona fide association of such citizens or (iv) any combination of voters and associations, to file a written argument in favor of or against the measure, in accordance with Article 4, Chapter 3, Division 9 of the Elections Code of the State of California and may change the argument until and including the date set by the San Diego County Registrar of Voters for the filing of primary

arguments, after which no arguments for or against the measures may be submitted to the City Clerk. Arguments in favor of or against a measure shall each not exceed 300 words in length. Each argument shall be filed with the City Clerk, signed, and include the printed name(s) and signature(s) of the author(s) submitting it, or if submitted on behalf of an organization, the name of the organization, and the printed name and signature of at least one of its principal officers who is the author of the argument.

B. The City Clerk shall comply with all provisions of law establishing priority of arguments for printing and distribution to the voters, and shall take all necessary actions to cause the selected arguments to be printed and distributed to the voters.

C. Pursuant to Section 9280 of the Elections Code, the City Council directs the City Clerk to transmit a copy of the measure to the City Attorney. The City Attorney shall prepare an impartial analysis of the measure, not to exceed 500 words in length, showing the effect of the measure on the existing law and the operation of the measure. The City Attorney shall transmit such impartial analysis to the City Clerk, who shall cause the analysis to be published in the ballot pamphlet along with the ballot measure as provided by law. The impartial analysis shall be filed by the deadline set for filing of primary arguments as set forth in subsection (A) above. The impartial analysis shall include a statement indicating whether the measure was placed on the ballot by a petition signed by the requisite number of voters or by the City Council. In the event the entire text of the measure is not printed on the ballot, nor in the voter information portion of the sample ballot, there shall be printed immediately below the impartial analysis, in no less than 10-font bold type, the following: **"The above statement is an impartial analysis of Measure ____. If you desire a copy of Resolution 094-2020, please call the City Clerk's office at 619-258-4100 x114, and a copy will be provided at no cost to you."**

SECTION 18. Rebuttals.

A. That pursuant to Section 9285 of the Elections Code of the State of California, when the City Clerk has selected the arguments for and against the various measures which will be printed and distributed to the voters, the City Clerk shall send copies of the argument in favor of the measure to the authors of the argument against, and copies of the argument against to the authors of the argument in favor. The authors or persons designated by them may prepare and submit rebuttal arguments not exceeding 250 words. The rebuttal arguments shall be filed with the City Clerk not later than the date set by the San Diego County Registrar of Voters for the filing of rebuttal arguments. Rebuttal arguments shall be printed in the same manner as the direct arguments. Each rebuttal argument shall immediately follow the direct argument which it seeks to rebut.

B. That all previous resolutions providing for the filing of rebuttal arguments for City measures are repealed.

C. That the provisions herein shall apply only to the election to be held on November 8, 202, and shall then be repealed.

SECTION 19. Placement on the Ballot. That a statement shall be printed in the ballot pursuant to Elections Code section 9223 advising voters that they may obtain a copy of a measure, at no cost, upon request made to the City Clerk.

SECTION 20. Effective Date. That this Resolution shall take effect immediately upon its adoption, but is subject to the reservation of rights contained herein.

SECTION 21. Direction to Staff Regarding Allegations. That allegations have been made regarding the Referendum proponents' signature-gathering process, and the City Attorney, City Clerk, and City Manager are hereby directed to cooperate with elections officials to address the allegations, and to bring back to Council additional action as needed.

SECTION 22. Right to Reconsider. That Council adopts this Resolution pursuant to its duty under Elections Code section 9241 to take action regarding the Referendum, but that Council expressly reserves its right to reconsider and change this action should the allegations regarding the signature gathering process be proven to be supported by credible evidence.

ADOPTED by the City Council of the City of Santee, California, at a Regular Meeting thereof held this 13th day of January, 2021, by the following roll call vote to wit:

AYES: **HALL, KOVAL, MCNELIS, TROTTER**

NOES: **NONE**

ABSENT: **MINTO**

APPROVED:

ROB MCNELIS, VICE MAYOR

ATTEST:

ANNETTE ORTIZ, CMC, CITY CLERK

RESOLUTION NO. 006-2021

EXHIBIT "A"

RESOLUTION NO. 094-2020

RESOLUTION NO. 094-2020 **EXHIBIT A**

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTEE, CALIFORNIA ADOPTING A GENERAL PLAN AMENDMENT, CASE FILE GPA2017-2, RELATING TO THE FANITA RANCH SPECIFIC PLAN

APN'S: 374-030-02; 374-050-02; 374-060-01; 376-010-06; 376-020-03; 376-030-01; 378-020-46, 50, 54; 378-030-08; 378-210-01; 378-210-03, 04; 378-210-10, 11; 378-220-01; 378-381-49; 378-382-58; 378-391-59; 378-392-61, 62; 380-031-18; 380-040-43, 44

(RELATED CASE FILES: SP2017-1, R2017-1, TM2017-3, P2017-5, P2020-2, DR2017-4, AEIS2017-11)

APPLICANT: HOMEFED FANITA RANCHO LLC

WHEREAS, the General Plan of the City of Santee ("City") specifies the location of various land uses and districts within the City, and includes "Areas for Special Study" for large properties intended for comprehensive master-planned development; and

WHEREAS, Fanita Ranch is identified in the General Plan as the largest Area for Special Study in the City, consisting of 2,638 acres at the northern end of the City, which represents a large area of development potential for which "Guiding Principles" have been developed; and

WHEREAS, the "Guiding Principles" for Fanita Ranch have been included in the General Plan since 1984, originally described as "Essential Elements"; and

WHEREAS, the majority of the Fanita Ranch property has been designated either as Specific Plan or PD – Planned Development in the Land Use Element of the General Plan since 1984, and small portions of the site are designated HL – Hillside Limited Residential and R1– Low Density Residential; and

WHEREAS, on August 29, 2018, HomeFed submitted a complete application for a master-planned development on Fanita Ranch consisting of 2,949 residential units; commercial uses, a school, parks, a community farm, a Special Use area, and 1,650-acre Habitat Preserve. In the event that the school site is not acquired for public or private school uses within two years of filing of the final map for the phase in which the site is located, the underlying MDR land use designation may be implemented and the maximum total number of units permitted in the Specific Plan area shall be 3,008 units; and

WHEREAS, a General Plan Amendment (GPA) is required to change the land use designation from PD – Planned Development, R1 – Low Density Residential, and HL – Hillside/Limited Residential to SP – Specific Plan, as reflected in **Exhibits A and B** attached hereto; and

WHEREAS, the "SP" land use designation requires the preparation of a Specific Plan for future development of such designated areas within the City; and

WHEREAS, Section 8.2 of the General Plan, as modified herein with thirteen (13) Guiding Principles, furthers the Land Use, Conservation, Recreation, Trails, Mobility and Housing Elements of the General Plan; and

WHEREAS, the goal of the Land Use Element is to "Promote development of a well-balanced and functional mix of residential, commercial, industrial, open space, recreation, and civic uses that will create and maintain a high-quality environment". Along with this goal are various objectives and policies that were considered and incorporated into the Fanita Ranch Specific Plan; and

WHEREAS, the California Environmental Quality Act (CEQA) provides opportunities for members of the public, agencies, and Native American Tribes to provide input on the environmental review aspects of the Fanita Ranch project prior to City Council's consideration of the proposed project; and

WHEREAS, after deeming the project complete on August 29, 2018 in accordance with California Government Code Section 65943, the City issued a Notice of Preparation on November 8, 2018, of a Draft Revised Environmental Impact Report (EIR) and a public scoping meeting was held on November 29, 2018 to solicit input on the scope and content of the environmental information for the Draft Revised EIR; and

WHEREAS, on May 29, 2020, the City issued a Notice of Availability of the Draft Revised EIR and established a 45-day public review period, beginning on May 29, 2020 and ending on July 13, 2020; and

WHEREAS, on May 8, 2019, the Santee City Council conducted a public workshop on the Fanita Ranch applications and development plan including a review of three proposed villages, a habitat preserve, parks, a public school (kindergarten through eighth grade), a working farm, roadway extensions, and trails; and

WHEREAS, on September 11, 2019, the Santee City Council conducted a second public workshop on Fanita Ranch providing an overview of the project's transportation and circulation network as it relates to the City's Mobility Element, and the proposed internal street network; and

WHEREAS, on October 23, 2019, the Santee City Council conducted a third public workshop on Fanita Ranch parks, trails and open space features, including a proposed community park and farm, eight neighborhood parks, numerous mini-parks, trails, and an "AgMeander" providing access to scenic qualities of the property and farm-related learning opportunities; and

WHEREAS, on February 12, 2020, the Santee City Council conducted a fourth public workshop on Fanita Ranch focused on fire safety, prevention and protection, as well as service-level requirements for fire and law enforcement personnel; and

WHEREAS, the General Plan Land Use Element identifies Fanita Ranch as one of the Areas for Special Study, and imparts sixteen (16) Guiding Principles for the development of the property; and

WHEREAS, the Guiding Principles are proposed to be amended to align with the development concepts of the Fanita Ranch Specific Plan while ensuring that standards of quality remain for the public health, safety and welfare of the community; and

WHEREAS, various Guiding Principles are revised to remove the references to "Planned Development" and replace those with references to the Fanita Ranch Specific Plan; and

WHEREAS, Guiding Principle one (1) is revised to reflect the land uses proposed by the Fanita Ranch Specific Plan, eliminating the business or office park concept with research and development; high technology uses, medical complex, executive headquarters and similar office and business uses because of the lack of demand for such uses in Santee and East County; and

WHEREAS, Guiding Principle two (2) is revised to reflect the land uses proposed by the Fanita Ranch Specific Plan, amending the Fanita Center concept with a new mix of residential, commercial, civic (fire station), institutional (school) uses and parks in three villages; and

WHEREAS, Guiding Principle three (3) is revised to eliminate references to residential lot sizes ranging from 6,000 to 20,000 square feet because the Fanita Ranch Specific Plan proposes clustered, small lot development in order to preserve natural habitat areas; and

WHEREAS, Guiding Principle four (4) is revised to update references to General Plan Elements, and to establish that clustered development minimizes the development footprint for preservation of natural land forms; and

WHEREAS, Guiding Principle five (5), regarding the grading concept, is revised because the Fanita Ranch Specific Plan proposes to minimize development footprints; and

WHEREAS, Guiding Principle six (6), regarding alternative residential design and grading requirements, is replaced with new language regarding smart growth and clustering to align with the proposed Fanita Ranch Specific Plan; and

WHEREAS, Guiding Principle seven (7), regarding the southern portion of Fanita Ranch south of the SDG&E powerline, identified as a regional park containing no less than 400 acres, is eliminated because the Fanita Ranch Specific Plan i) proposes a variety of parks to serve the community north of the SDG&E powerline; ii) envisions the land adjacent to the SDG&E powerline as a habitat preserve to supplement preserved

lands in the surrounding vicinity; and iii) supports clustered development to minimize the overall development footprint within the proposed Specific Plan boundary; and

WHEREAS, Guiding Principle eight (8), regarding park facilities, is renumbered as Guiding Principle seven (7) with new park facility guidance to align with the recommendations of the General Plan Recreation Element and the proposed Fanita Ranch Specific Plan park proposals; and

WHEREAS, Guiding Principle nine (9), regarding an 18-hole golf course with a hotel/conference complex, or a recreational facility based around a man-made lake, is renumbered as Guiding Principle eight (8) and land uses are modified with an agrarian theme, with a small working farm conceived as the centerpiece of the proposed Specific Plan; and

WHEREAS, Guiding Principles ten (10) and eleven (11), regarding the extension of Fanita Parkway and Cuyamaca Street respectively, are substantially the same and are renumbered as Guiding Principles nine (9) and ten (10) respectively; and

WHEREAS, Guiding Principle twelve (12), regarding circulation improvements, is eliminated because i) circulation improvements are discussed in proposed (new) Guiding Principles 9, 10, and 11; and ii) the Fanita Ranch Specific Plan provides street improvement standards in Chapter 4, Mobility; and

WHEREAS, Guiding Principle thirteen (13), regarding trails, is renumbered as Guiding Principle eleven (11), and is revised to reference the Fanita Ranch Mobility Plan, General Plan Trails Element and requirements of the Multiple Species Conservation Program Subarea Plan; and

WHEREAS, Guiding Principle fourteen (14), regarding a Comprehensive Implementation Element to a include cost revenue assessment, identification of required public improvements, a phasing plan for public improvements and land use, a financing plan for public improvements and a Development Agreement, is eliminated because public improvements and their phasing are addressed i) in Chapter 10 of the Fanita Ranch Specific Plan entitled “implementation”; ii) in the conditions of discretionary permit approval; and iii) in the Fanita Ranch Development Agreement between the City of Santee and applicant; and

WHEREAS, Guiding Principle fifteen (15), which states that the Fanita Ranch area shall not be subdivided (except for the Sports Park property), until a Planned Development is adopted by the City of Santee, is renumbered as Guiding Principle twelve (12), and is revised to delete the Sports Park and Planned Development references because i) a Sports Park property is not proposed by the Fanita Ranch Specific Plan; and ii) the SP – Specific Plan land use designation replaces the PD – Planned Development, R1 – Low Density Residential, and HL – Hillside/Limited Residential land use designations; and

WHEREAS, Guiding Principle sixteen (16), is renumbered as Guiding Principle thirteen (13), and is revised to require illustrative development plans for all land uses rather than for circulation and residential product types only; and

WHEREAS, future development within the Fanita Ranch Specific Plan area will occur in a manner consistent with the Guiding Principles of the General Plan Land Use Element, amended to incorporate the development concepts of the Specific Plan; and

WHEREAS, conforming changes to the General Plan, to incorporate the residential development of the Fanita Ranch Specific Plan, will be made as part of the sixth Cycle Housing Element currently under preparation with an anticipated adoption date prior to April 15, 2021; and

WHEREAS, the proposed General Plan Amendments are comprehensively reflected in **Exhibit C** attached hereto; and

WHEREAS, the revised Guiding Principles for the development of the Fanita Ranch site implement goals, objectives and policies of the Santee General Plan, and are shown on **Exhibit D** attached hereto; and

WHEREAS, on September 11, 2020, the Director of Development Services published a notice of public hearing on General Plan Amendment GPA2017-2, and related case files R2017-1, TM2017-3, SP-2017-1, P2017-5, P2020-2, DR2017-4 and AEIS2017-11, to be held on September 23, 2020; and

WHEREAS, on September 23, 2020, the City Council held a duly advertised public hearing on GPA2017-2 and the related case files; and

WHEREAS, the City Council considered the staff report, all recommendations by staff, the Final Revised EIR, the entire record, and all public testimony; and

WHEREAS, The City Council has certified the Final Revised EIR pursuant to the California Environmental Quality Act and adopted Findings of Fact, a Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Program for the Fanita Ranch project. The City Council hereby incorporates by reference, as if fully set forth herein, Resolution 093-2020 certifying the Final Revised EIR and adopting the Findings of Fact, and Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program for the Fanita Ranch project.

NOW, THEREFORE, BE IT RESOLVED by the City of Santee City Council, after considering the evidence presented at the public hearing, as follows:

SECTION 1: The City Council finds that General Plan Amendment GPA2017-2, including proposed text, map revisions and amended Guiding Principles furthers the goals,

objectives, policies of the General Plan, based upon the following key points, and more fully described in Table 4.10-2 of the Final Revised EIR, incorporated herein by reference:

A. Promotes smart growth, clustering and sustainability principles to conserve resources, reduce impacts on the environment, and promote active lifestyles (Land Use, Conservation, Trails Elements);

B. Provides village centers with a mix of land uses including public facilities, open space, residential and commercial uses (Land Use Element);

C. Encourages a range of housing types and sizes to respond to the City's housing demands, and appeal to a diverse range of incomes and ages (Housing Element);

D. Implements a comprehensive Fire Protection Plan that results in a fire safe and fire aware community (Safety Element);

E. Provides a highly connected complete streets system that supports various modes of transportation (Mobility Element);

F. Provides a public trail system that accommodates a variety of users that connects villages and community amenities, protects sensitive habitat areas and provides linkages to local and regional parks and trails (Trails Element);

G. Provides a public Community Park, Neighborhood Parks and Mini Parks that satisfy the Parkland Dedication requirements of the General Plan (Recreation Element); and

H. Establishes a habitat preserve to protect natural biological resources and ensures continued support for sensitive species and their habitats through implementation of a long-term preserve management plan (Conservation Element).

I. Respects natural views of the site from public vantage points (Community Enhancement Element).

J. Results in a development that will minimize noise levels through various sound attenuation measures that include walls and landscaping along roads, speed limitations through traffic calming features (Noise Element).

SECTION 2: The Santee City Council further finds that the proposed Fanita Ranch Guiding Principles in the Land Use Element amendment (**Exhibit D**) are consistent with the General Plan as described in Table 4.10-1 of the Final Revised EIR, attached hereto as **Exhibit E.**

SECTION 3: The Santee City Council further finds that the GPA2017-2 is consistent with the "Adjacent Land Use Compatibility Guide" of the Land Use Element because: i) the Fanita Ranch site is bordered by existing Santee residential neighborhoods to the south

and the unincorporated residential communities of Lakeside and Eucalyptus Hills to the east; ii) Sycamore Canyon County Preserve and Goodan Ranch Regional Park are to the north; and iii) Marine Corps Air Station Miramar and Padre Dam Municipal Water District facilities, including Santee Lakes Recreation Preserve, lie west of the proposed Specific Plan area. These existing uses are buffered by natural open space areas which will be included in a Habitat Preserve ultimately managed in accordance with a Subarea Plan of the region-wide Multiple Species Conservation Program.

SECTION 4: The General Plan Amendment to the Santee General Plan, to establish a Specific Plan land use designation as depicted on **Exhibit B** and as further shown in **Exhibit C**, is hereby approved. The City Clerk is directed to i) add the revised Land Use Map and remove the existing Land Use Map as depicted in **Exhibits A and B** respectively and ii) add the underlined text and remove stricken text as shown in **Exhibit C** to incorporate the Fanita Ranch General Plan Amendment into the Santee General Plan.

ADOPTED by the City Council of the City of Santee, California, at a Regular Meeting thereof held this 23rd day of September, 2020 the following roll call vote to wit:

AYES: **HALL, KOVAL, MCNELIS, MINTO**

NOES: **HOULAHAN**

ABSENT: **NONE**

APPROVED:

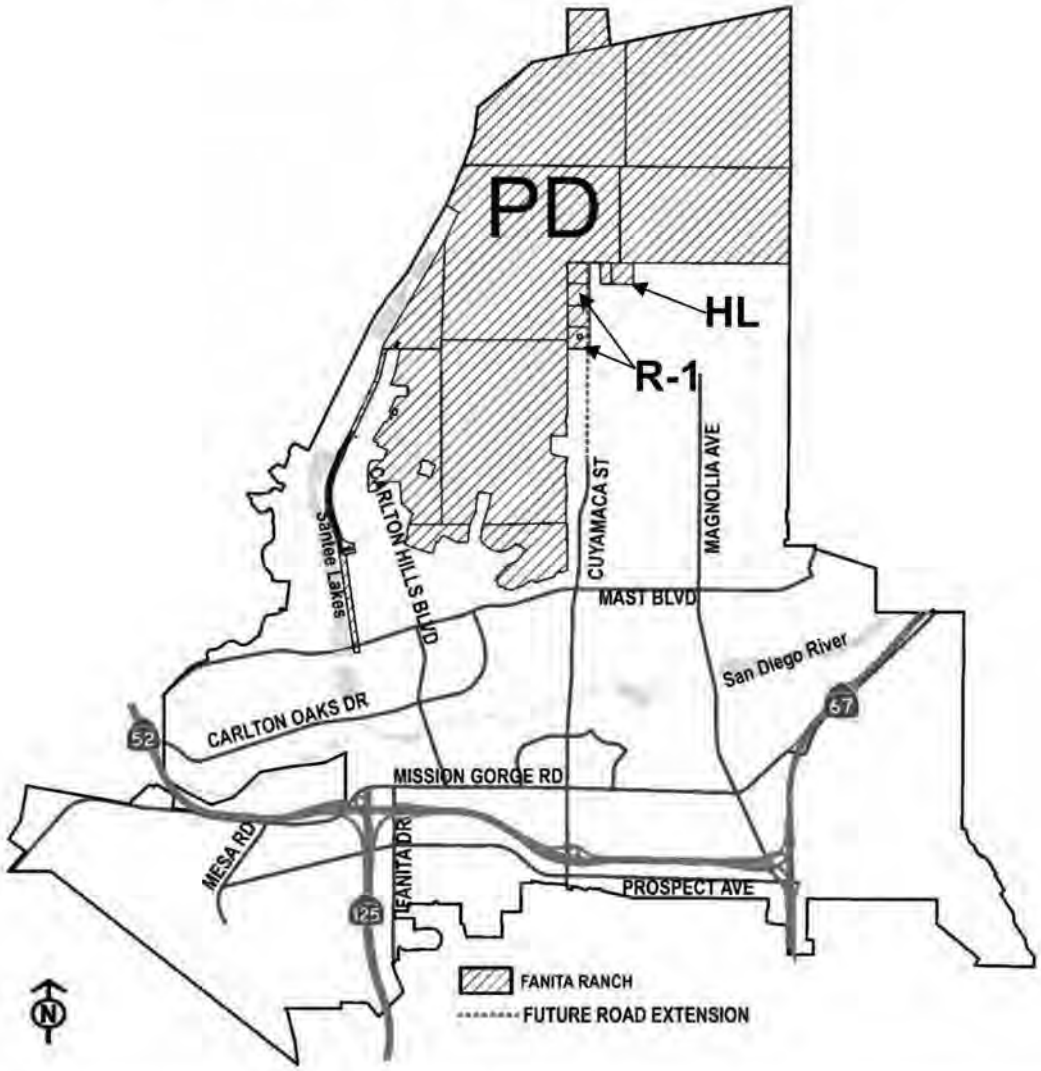
JOHN W. MINTO, MAYOR

ATTEST:

ANNETTE ORTIZ, CITY CLERK, CMC

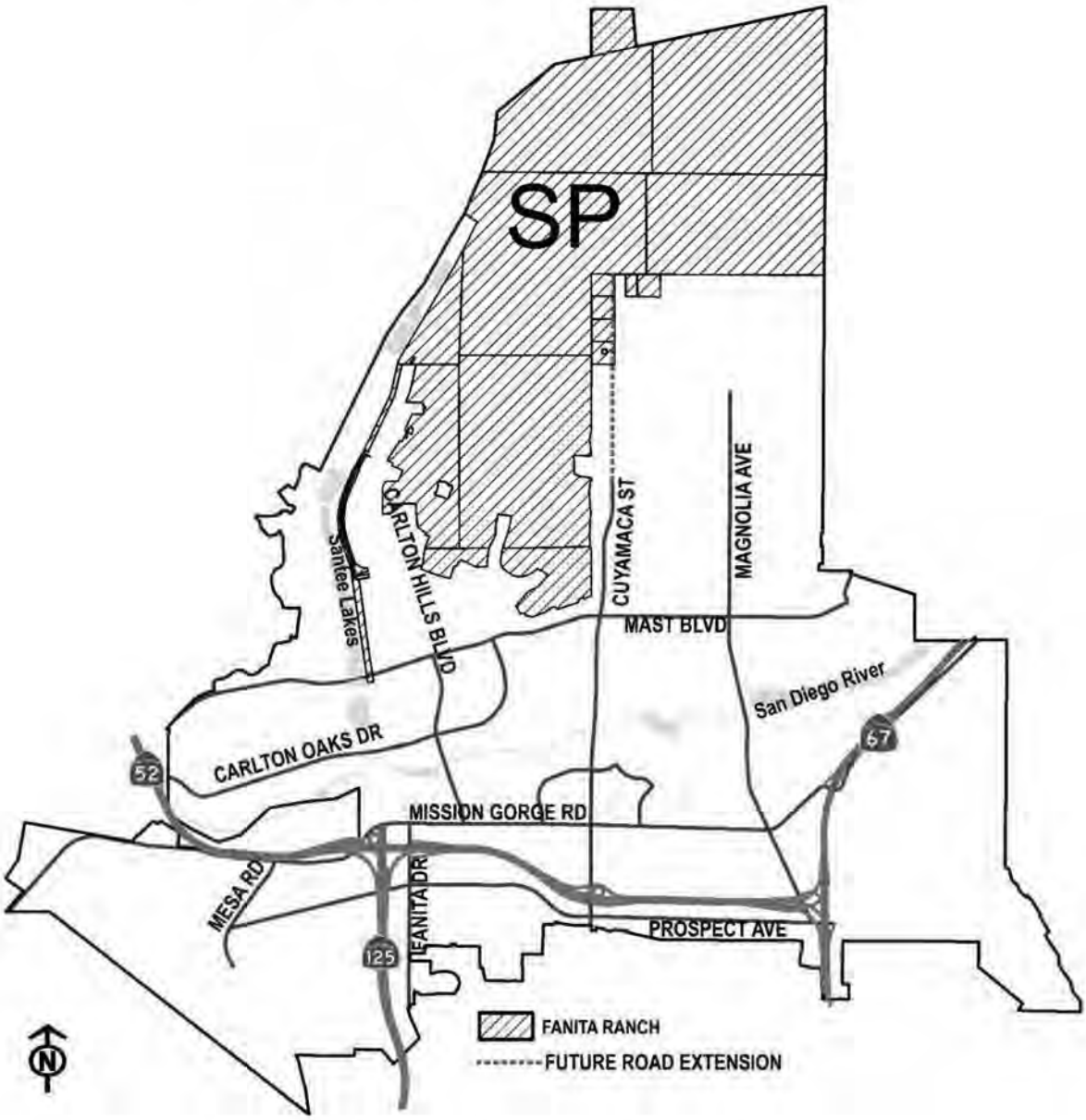
Exhibits
- A: Existing General Plan Land Use Map.
- B: Proposed General Plan Land Use Map.
- C. Fanita Ranch General Plan Amendment.
- D. Revised General Plan Guiding Principles for the development of Fanita Ranch.
- E. EIR Table 4.10-1: Project Consistency with Proposed Guiding Principles for Fanita Ranch.

Exhibit A: Existing General Plan Land Use Map



	GENERAL PLAN DESIGNATION
PD – Planned Development	This designation provides for mixed-use development potential including employment parks, commercial, recreational, and various densities of residential development pursuant to a development plan and entitlements being approved by the City Council. This designation is intended for select properties within the City where a variety of development opportunities may be viable and where the City wishes to encourage innovative and very high-quality development in a manner which may not be possible under standard land use designations and their corresponding zones.
HL – Hillside/Limited Residential	This designation is intended for residential development in areas that exhibit steep slopes, rugged topography and limited access. Residential uses are characterized by rural large estate lots, with significant permanent open space area, consistent with the constraints of slope gradient, soil and geotechnical hazards, access, availability of public services, biological resources and other environmental concerns. This designation has primarily been applied in the steeply sloped extreme southwest and northeast portions of the City.
R-1 – Low Density Residential	This designation is intended for residential development characterized by single family homes on one-half acre lots or larger, which are responsive to the natural terrain and minimize grading requirements. This designation has been located in steeply sloped hillside and canyon areas in the southwest, southeast, northeast and north central portions of the City.

Exhibit B: Proposed General Plan Land Use Map



	GENERAL PLAN DESIGNATION
SP – Specific Plan	This designation requires the preparation of a Specific Plan for future development of an area within the City. State law authorizes cities to prepare and adopt specific plans for the systematic implementation of the general plan for all or part of the area covered by the general plan (Government Code Section 65450). This designation is intended for select properties within the City where a variety of development opportunities may be viable and where the City wishes to encourage innovative and very high-quality development. Specific plans shall contain planning policies and regulations, and may combine zoning regulations, capital improvement programs, detailed development regulations, and other regulatory requirements into one document, which are designed to meet the unique needs of a specific area. Specific plans shall provide a fiscal assessment, identification of required public improvements, public improvement and development phasing, financing plans and a development agreement.

EXHIBIT C

FANITA RANCH

GENERAL PLAN AMENDMENT

City of Santee

List of Amendments

The following is a list of the proposed Santee General Plan Amendments by Element:

Chapter 1, Land Use Element. *Update:*

Figure 1-1 to designate Fanita Ranch as Specific Plan (SP) and add SP to the legend.

Page 1-9, Third and Last Paragraphs to remove outdated information.

*Page 1-16, "Fanita Ranch" Section to c*orrect the acreage for the Fanita Ranch Specific Plan Area and to remove references to the term "move up" housing.

Page 1-18, No. 7 to remove outdated information.

Page 1-29 to add the Specific Plan land use designation and to replace "Planned Development" with "Specific Plan" for Fanita Ranch.

Page 1-30 through 1-31a, 8.2, Fanita Ranch to revise the Guiding Principles.

Page 1-40, Table 3 to remove the Fanita Ranch acreage from the "Planned Development" land use designation, add the "Specific Plan" land use designation with the Fanita Ranch acreage, and update the percentages accordingly.

City of Santee Mobility Element, adopted by City Council on October 25, 2017 as an update to Chapter 3, Circulation Element. *Update*

Page 33, First Paragraph to add "Additional or modified street sections are permitted with an approved Specific Plan." This language allows for specially designed street sections within the Specific Plan Area to address the unique topographic conditions of the site, establish a unique design character, and accommodate emergency evacuation and emergency vehicle access.

Page 34, Second Bullet to replace "Princess Joann Road" with "Chaparral Drive, and add a new bullet: "Fanita Parkway, between Ganley Road and Lake Canyon".

Page 35, Forth Bullet to delete "Cuyamaca Street, between northern terminus and Princess Joann Road" from the list of Collector Roads with Two-way Left Turn Lane.

Page 38, to add a new bullet: "Cuyamaca Street, between north terminus and Chaparral Drive" and revise the third bullet to read:" Fanita Parkway, between northern terminus and Lake Canyon" .

Figure 7-1: Buildout Roadway Classifications to reflect revisions to the text.

Figure 7-2: Planned Bicycle Network to reflect revisions to the text.

Chapter 4, Recreation Element. *Update:*

Page 4-10, Third Paragraph to remove reference to the community park at Carlton Hills Boulevard.

Page 4-10, Fifth Paragraph to reflect proposed uses for this site including a designated school site and community park.

Chapter 5, Trails Element. *Update:*

Figure 5-1: Trails Plan to add a planned bike path on Cuyamaca Street north of Chaparral Drive and revise the proposed planned bike path alignment on Fanita Parkway.

Page 5-17, Fanita Ranch paragraph to remove outdated information and refer to the Specific Plan and the MSCP Subarea Plan.

Chapter 6, Conservation Element. *Update:*

Page 6-11 to correct the acreage of Fanita Ranch to "2,638".

Chapter 8, Safety Element. *Update:*

Figure 8-1 to add future fire station and future water tanks within Fanita Ranch.

Chapter 9, Community Enhancement Element. *Update:*

Page 9-19, "Landforms and Views" to minimize landform alterations in areas where known sensitive resources occur.

Page 9-26 to add new policy 17.3 that allows the City to consider special grading standards in hillsides that promote compact development, focuses on landform grading in slopes that are visible from public rights-of- way, and permits efficient grading techniques in less visible areas of development.

FANITA RANCH

GENERAL PLAN AMENDMENT

Updated General Plan Pages

City of Santee

August 2020

Commercial Land Use - A preliminary market analysis of existing and potential commercial, office and industrial development in the City of Santee was undertaken as part of an update to the General Plan. The report, City of Santee General Plan Update Market Analysis, appears in its entirety in the Technical Appendices to the General Plan Environmental Impact Report.

The study concluded that the City continues to export a significant amount of retail sales to other communities, particularly in the convenience goods, eating and drinking establishments and auto dealers and auto supply categories. The recent completion of the Trolley Square commercial center at 425,000 square feet of space, is expected to fulfill much of this need. The study also found that the City is a significant importer of revenues in the home improvement and general merchandising categories.

Another of the study's findings was that the development of the Fanita Ranch ~~is critical to~~will benefit the City's financial future as it would generate ~~an estimated $39 million dollars (2000 dollars) in~~additional retail sales~~, with as estimated 30 million dollars staying in the City~~, and would provide a significant stock of new and higher end housing which would be beneficial in the City's efforts to attract higher end firms and employers.

Office Land Use - Office development in Santee has not been significant historically, however, interest in East County and Santee in particular has grown in recent years. Existing office development in the City encompasses about 200,000 square feet, located at various sites along Mission Gorge Road and Cuyamaca Street. With the City's desire to focus future office development in the Town Center and Fanita Ranch areas, existing office designated properties were evaluated in the update process to determine if alternative land use designations were appropriate.

The market analysis prepared for the General Plan Update concluded the Town Center was an excellent location for the City's future office and Research and Development type development due to its excellent regional location, easy freeway access, good inventory of available land, and availability of restaurants and other amenities in close proximity.

In August of 2000, the City Council adopted an Office Park Overlay, which covers an approximately 110-acre area in the City's Town Center, on the south side of the San Diego River. The following year the City, in conjunction with the County of San Diego, a developer was selected to develop this area in accordance with a master plan for a comprehensive office-park development including office, residential and ancillary commercial uses. In 2001, the San Diego Economic Development Commission released a report that identified the City's Fanita Ranch and Town Center areas as two of the best locations for future office ~~park development~~ uses in San Diego County. The first phase of that project occurred with the breaking of ground for the new Hartford Insurance building in the summer of 2002.

To address these concerns the City adopted the Town Center Specific Plan in October of 1986 to guide the development of the Town Center area. The plan envisions a comprehensively planned, mixed use development of commercial, office, residential, recreational and open space uses over 706 acres in the center of the City. Since the plan was adopted, almost one million square feet of retail and office uses have been developed, along with over 400 residential units. In addition, the multiple-award winning Santee Multi-modal transit station has been completed along with over four miles of pedestrian paths providing alternative transportation modes linking land uses within the Town Center.

A successful revegetation of a portion of the San Diego River has been completed and the area has been occupied by the Least Bell's Vireo, an endangered riparian songbird. Construction is underway on the City's 55-acre Town Center Community Park on the north side of the river and a Master Plan is underway for development of a 100-plus acre office park and mixed-use development on the south side of the river.

In 2000, the City Council adopted an Office Park Overlay over approximately 110 acres in Town Center, south of the river. The intent of the overlay is to encourage the development of a high technology business campus that can take advantage of the proximity to freeways and the multi-modal transit station. The master plan for this area will also include a higher density residential component that will allow employees of the business park to live near work, one of the basic principles of Smart Growth.

Fanita Ranch - ~~The 2,589-acre~~ Fanita Ranch exhibits varied topography, scenic resources, and significant vegetation and habitats. With 2,638 acres of land, ~~It~~ it is the largest single ownership area in the City and represents an area of tremendous development potential. Potential natural hazards related to slope stability and geologic resources also exist within this area.

According to the market analysis prepared for the General Plan Update, the development of the Fanita Ranch will have a significant positive economic impact on the rest of the City, through the increased property taxes, and the sales taxes generated by increased sales at local businesses. The Ranch also is the only remaining area in the City where significant numbers of ~~move-up~~new housing can be built. A good supply of ~~move-up~~ new housing is not only needed to provide opportunities for existing residents~~,~~ but is also a factor in attracting high technology and office users to the City's planned office and technology parks.

3. Regionally there is a shortage of development sites in the established office and industrial markets. The City's Town Center represents is an excellent location for significant businesspark development for office and Research and Development firms due the excellent regional access via SR52 and the San Diego Trolley, a good inventory of available land of significant size and adjacent amenities such as restaurants and retail shops.

4. The City is ~~a~~ exporting a significant share of retail sales to stores outside the City. Specific areas of weakness are auto sales and supplies, convenience goods and eating and drinking establishments. The City is a net importer of sales in the general merchandising and home improvement categories.

5. Significant improvement in sales and local capture can result with the completion of the SR52 freeway.

6. With the completion of currently approved projects such as the Trolley Square, the City can support approximately 25 acres of additional retail development and a significant level of office/industrial development through the year 2015.

7. The development of the Fanita Ranch is critical to the City's economic future by providing ~~an estimated $30 million dollars in local retail sales, as well as providing the high-end~~a mix of new housing stock needed to attract ~~high-end office and R and D firms~~ commercial and industrial employment opportunities to the City.

6.0 Goal

Promote development of a well-balanced and functional mix of residential, commercial, industrial, open space, recreation, and civic uses that will create and maintain a high quality environment.

7.0 Objectives and Policies

Objective 1.0 **Continue implementation of the Town Center Specific Plan which provides for retail commercial, office, recreational and other appropriate uses to establish a focal point for the City.**

Policy 1.1 The City shall encourage the continued use of public/private partnerships in the development and implementation of the Town Center Specific Plan.

Policy 1.2 The City shall incorporate residential development into any master plan for the Edgemoor property on the south side of the San Diego River to take advantage of the proximity of the multi-modal transit station.

development in a manner which may not be possible under standard land use designations and their corresponding zones.

While the PD designation does not, in itself, limit the extent or mix of development to occur, other provisions within the General Plan may do so for particular properties. All development which takes places pursuant to the Planned Development designation shall be consistent with the General Plan.

SP – Specific Plan

This designation requires the preparation of a Specific Plan for future development of an area within the City. California State law authorizes cities to prepare and adopt specific plans for the systematic implementation of the general plan for all or part of the area covered by the general plan (Government Code Section 65450). This designation is intended for select properties within the City where a variety of development opportunities may be viable and where the City wishes to encourage innovative and very high-quality development. Specific plans shall contain planning policies and regulations, and may combine zoning regulations, capital improvement programs, detailed development regulations, and other regulatory requirements into one document, which are designed to meet the unique needs of a specific area. Specific plans shall provide a fiscal assessment, identification of required public improvements, public improvement and development phasing and financing plans and a development agreement.

TC – Town Center

This designation is intended to provide the City with a mixed-use activity center which is oriented towards and enhances the San Diego River. This designation shall be developed in accordance with the Town Center Specific Plan including community commercial, civic, park/open space and residential uses. The intent of the Specific Plan is to provide the City with detailed land uses and appropriate development regulations that are consistent with the General Plan.

8.2 Areas for Special Study

The following development guidelines for the Fanita Ranch Specific Plan, Rattlesnake Mountain Planned Development (PD), and Carlton Oaks ~~Planned Development (PD)~~PD designations on the Land Use Plan provide a framework to assure that these unique and significant areas will be developed and preserved with:

1. Standards of quality for community appearance and function;
2. Compatibility of development of land and structures that ensures public health, safety and welfare; and
3. Policies that minimize grading, preserve significant biological resources, preserve ridgelines and view corridors, and provide for recreational amenities.

Fanita Ranch - The Fanita Ranch ~~planned development~~Specific Plan will be developed in a manner consistent with the Guiding Principles described below:

1. The ~~Planned Development~~Specific Plan ~~may~~ should include a comprehensively planned, high architectural quality~~business or office park~~, mixed-use Village Center that allows for housing, retail, office and service uses. ~~The business or office park shall include such uses as research and development, high technology uses, medical complex, executive headquarters or other similar office or business uses.~~

2. The ~~Planned Development~~Specific Plan shall ~~include~~ provide a community~~-~~focused Village Center ~~(Fanita Center) which~~ that includes provisions for public parks, residential, office, commercial development and institutional uses such as schools, fire station, ~~branch library or,~~ branch post office, and other civic and community uses.

3. The plan shall allow for a diversified ~~contain a~~ mix of housing~~e~~ types and sizes. ~~on lot sizes distributed as follows:~~

~~6,000 sq. ft. lots – 20 percent of total lots~~
~~10,000 sq. ft. lots – 20 percent of total lots~~
~~20,000 sq. ft. lots – 60 percent of total lots or greater~~

4. The Land Use Plan, ~~Administrative~~ Mobility Plan, ~~Circulation Plan,~~ Trails and Open Space Plan, and Illustrative Site Plan shall be sensitive to the preservation of natural ~~open space and the preservation of existing natural major~~ land forms and sensitive habitat areas by clustering development to minimize the development footprint and by establishing~~. The purpose of this requirement is to protect the major ridgeline and viewshed amenities, to minimize erosion, provide for public safety, protect natural resources and to establish~~ site specific design standards which provide for development in harmony with the environment. ~~The planned development will utilize contour grading techniques which are consistent with these objectives while providing opportunities for creative product design.~~

5. ~~Other than within the northeastern sector of the site, the General Plan guidelines for hillside development should be used as the basis of the planned development's conceptual grading. Consideration may be given to permit grading of isolated steep slopes or along transition edges of steep slopes. Mass terracing should be avoided in favor of individual pad grading, wherever possible.~~ The Specific Plan shall permit grading of steep slopes to minimize the development footprint. The plan should include site specific design standards that are sensitive to transitional edges between steep slopes and natural topography where feasible, particularly at the edges of the development area and along slopes visible from the public rights-of-way.

6. The ~~plan~~Specific Plan shall incorporate smart growth, clustering, and sustainability principles, as practicable, to preserve open space, minimize the consumption of natural resources, conserve water and energy, and promote walkable development.~~may consider~~

~~alternative residential design and grading requirements which are sensitive to the existing topography and out of the City's viewshed.~~

~~7. A southern portion of Fanita Ranch, primarily southerly of the SDG&E power line, shall be identified as a regional park and contain no less than 400 acres.~~

~~8.~~7. The ~~Planned Development should~~Specific Plan should ~~, subject to population demand,~~ contain mini-parks, neighborhood parks, and ~~two~~ a community park~~s~~ as required by the recommendations of the Recreation Element of the General Plan. ~~Dedication of a Sports Park, (accessed by Carlton Hills Boulevard), to the City of Santee will fulfill the requirements of one community park.~~

~~9.~~8. The plan shall contain a small working farm that demonstrates the use of permaculture techniques.~~championship level, minimum 6,800 yard, par 70-75, 18-hole golf course, including support facilities. A hotel/conference complex shall be included in conjunction with the golf course facility. An alternative plan may also be designated which, in lieu of a golf course and hotel/conference facility, includes a recreational facility based around a man-made lake, using non-reclaimed water, and which is approximately 200 acres in area.~~

~~10.~~9. The ~~Planned Development~~Specific Plan shall include the extension of Fanita Parkway along the western boundary of the property.

~~11.~~10. The ~~Planned Development~~Specific Plan shall include the extension of Cuyamaca Street into the site, ultimately connecting with Fanita Parkway consistent with the General Plan.

~~12. Additional circulation facilities for the planned development areas shall be considered. The traffic and phasing analysis shall specifically address the following elements:~~

~~a. Extension of Magnolia Avenue north and west to connect with Cuyamaca Street extension.~~

~~b. The provision of a connecting road between the project and State Route 67.~~

~~c. The extension of Carlton Hills Boulevard from its present terminus northward through the site to the developed area.~~

~~d. The participation in and extension of Mast Boulevard east and/or west to connect with State Highways 67 or 52 and Mission Gorge Road.~~

~~e. A four-lane surface street (Fanita Parkway) along the western boundary.~~

~~13.~~11. The ~~Planned Development~~Specific Plan shall include a ~~Comprehensive Trails Element~~comprehensive system of trails ~~designed~~ as part of the overall Mobility Plan. Trails shall~~to~~ link with the proposed trails outside the Fanita Ranch, which is consistent

with the objectives and standards set forth within the City's adopted Trails Element to the General Plan. Access to Sycamore ~~Park~~ Canyon County Preserve shall be provided to Santee residents. Trail access shall be subject to the Natural Community Conservation Planning (NCCP) design guidelines and standards.

~~14. The Planned Development shall include a Comprehensive Implementation Element, which shall consist of:~~

~~1) A cost revenue assessment.~~
~~2) Identification of required public improvements.~~
~~3) A phasing plan for the public improvements and land use.~~
~~4) A financing plan for the public improvements.~~
~~5) A Development Agreement.~~

~~Regarding phasing, all public improvements and land uses shall be phased according to detailed phasing plan as mentioned above (14.3). Public improvements shall be constructed prior to or simultaneously with their projected need. The plan shall contain performance standards or other measurements for determining the timing for all public improvements. Performance standards may include any appropriate means of measurement to determine when a given public improvement is deemed necessary by the City. Private land uses shall be phased to insure that land uses deemed desirable by the City (i.e. golf courses, estate units, executive units, etc.) will be included within the earliest phases of the Fanita Ranch.~~

~~15.~~12. The Fanita Ranch area shall not be subdivided ~~(except for the Sports Park property)~~ until a ~~Planned Development~~Specific Plan is adopted by the City of Santee.

~~16.~~13. To ensure that proposed development is appropriate ~~for a given, site~~, ~~the Planned Development~~the Specific Plan shall contain schematic or illustrative development plans which show ~~prototype~~ prototypical circulation systems, all proposed land uses, and potential residential product types ~~for each area designated by residential development~~.

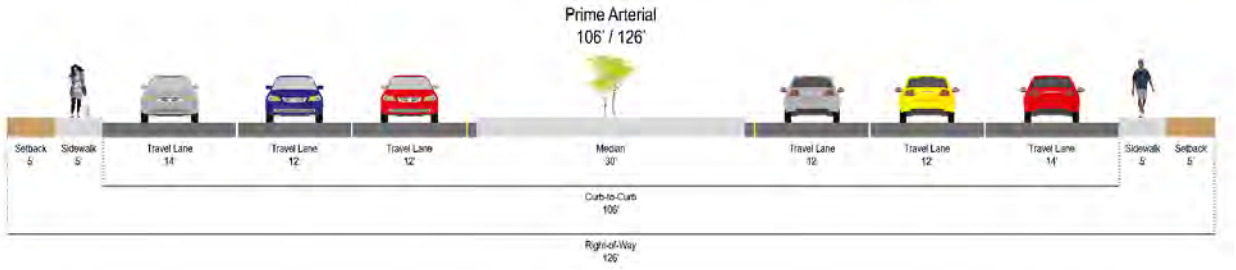
Parkway	Median	4 lanes	15,000	21,000	30,000	35,000	40,000
	w/ TWLTL	2 lanes w/ TWLTL	5,000	7,000	10,000	13,000	15,000
	-	2 lanes	4,000	5,500	7,500	9,000	10,000
Collector	w/ TWLTL	2 lanes w/ TWLTL	5,000	7,000	10,000	13,000	15,000
	Industrial Collector	2 lanes	2,500	3,500	5,000	6,500	8,000
	Residential Collector	2 lanes	2,500	3,500	5,000	6,500	8,000
Non-Circulation Element							
Industrial Local		2 lanes	-	-	2,200*	-	-
Residential Local		2 lanes	-	-	2,200*	-	-
Cul-De-Sac Street		2 lanes	-	-	300*	-	-
Hillside Street		2 lanes	-	-	700*	-	-

Notes:
TWLTL = Two-way left-turn lane.
*represents design capacity of non-CE road. LOS does not apply to non-CE roads.

The following cross-sections display the typical sections (features, dimensions, etc.) for each classification. Cross-sections are intended to demonstrate general feasibility of proposed network buildout, however, actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer. Additional or modified street sections are permitted with an approved Specific Plan.

Prime Arterial

Prime Arterial are six lanes or larger divided roadways with raised, landscaped medians to control turning movements that cross other arterials at grade with signalized intersections. Prime Arterials also have an increased landscaped parkway width between the right-of-way and curb.



Notes:

1. *Class II bike lanes currently exist along Mission Gorge Road, between SR-52 Ramps and Fanita Drive, and these bike lanes will remain under the Preferred Plan.*

2. *Parkways (for non-contiguous sidewalks) and/or wider sidewalks may be required where necessary on Prime Arterial facilities.*

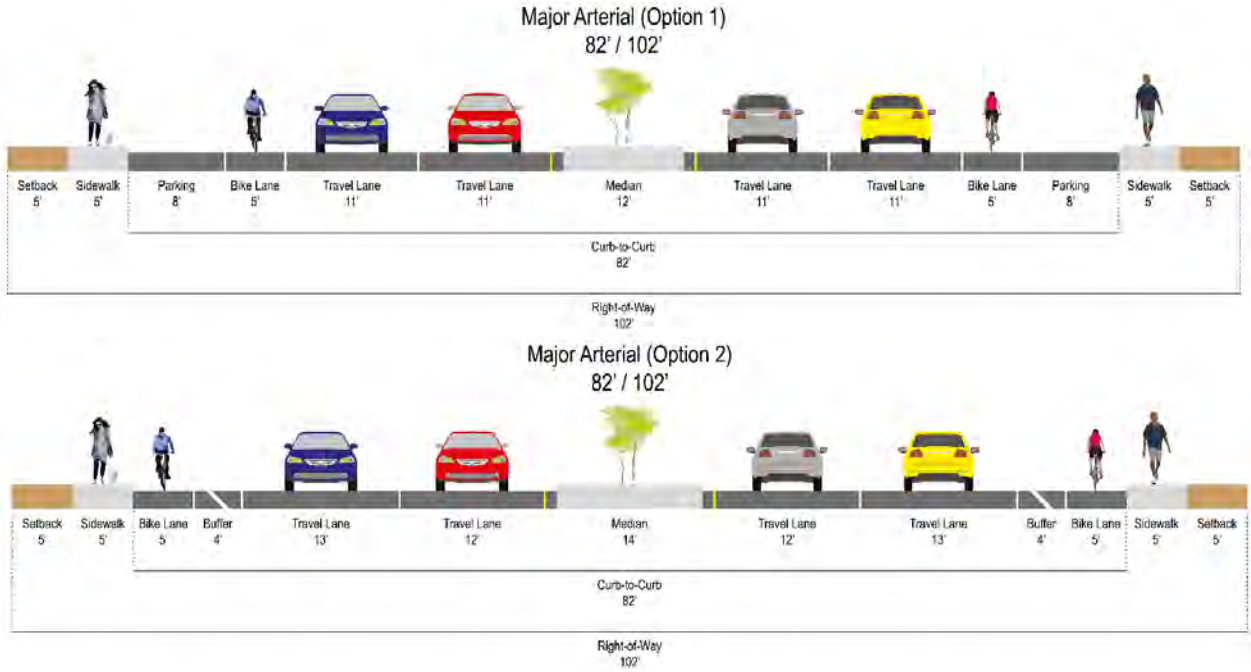
3. *Town Center Specific Plan or Mission Gorge Road Design Standards apply where applicable.*

The following Mobility Element roadways have been designated as Prime Arterials.

- Cuyamaca Street, between Town Center Parkway and Prospect Avenue;
- Magnolia Avenue, between Mission Gorge Road and Prospect Avenue; and
- Mission Gorge Road, between SR-52 and Riverview Parkway.

Major Arterial

Major Arterials are four to six lane divided roadways with landscaped raised medians to control turning movements and that cross other arterials at grade with signalized intersections.



Note:

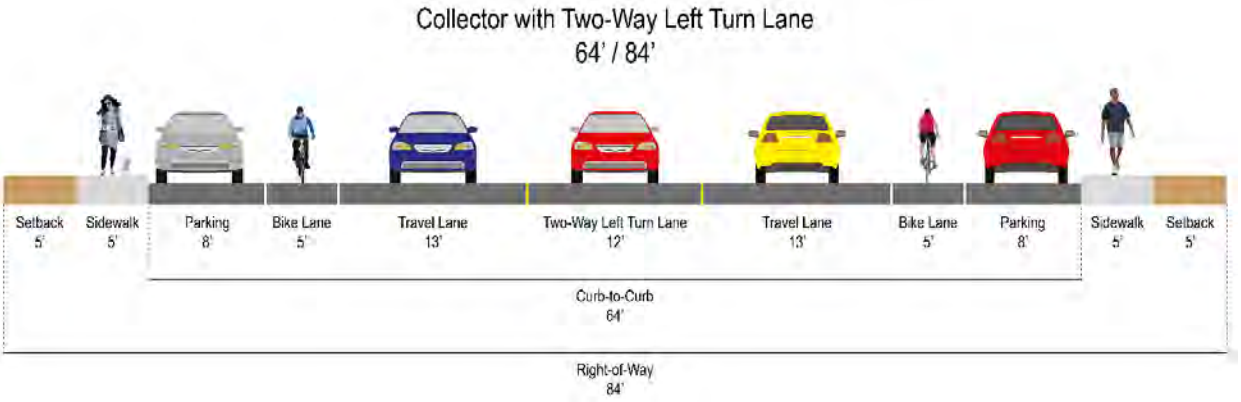
1. *Parkways (for non-contiguous sidewalks) and/or wider sidewalks may be required where necessary on Major Arterial facilities.*

The following Mobility Element roadways have been designated as Major Arterials.

- Carlton Hills Boulevard, between Lake Canyon Road and Mission Gorge Road;
- Cuyamaca Street, between ~~Princess Joann Road~~ Chaparral Drive and Town Center Parkway;
- Cuyamaca Street, between Prospect Avenue and southern city limits;
- Fanita Drive, between Mission Gorge Road and Prospect Avenue;
- Fanita Parkway, between Ganley Road and Lake Canyon Road;
- Magnolia Avenue, between Princess Joann Road and Mission Gorge Road;
- Magnolia Avenue, between Prospect Avenue and southern city limits;
- Mast Boulevard, between SR-52 and Magnolia Avenue;
- Mast Boulevard, between Magnolia Avenue and eastern city limits (with Mast Boulevard extension option)
- Mission Gorge Road, between western City limits and SR-52;
- Mission Gorge Road, between Riverview Parkway and Magnolia Avenue;
- Woodside Avenue, between Magnolia Avenue and SR-67.

Collector Road with Two-Way Left Turn Lane (TWLTL)

Collectors are feeder or connector roadways that complement the arterial network, but are of lesser capacity, with two or four lanes and striped turning lanes. Collectors typically have signalized or "Stop" sign control at intersections with other circulation element streets.



The following Mobility Element roadways have been designated as Collector Roads with Two-Way Left Turn Lane:

- Carlton Hills Boulevard, between Swanton Drive and Lake Canyon Road;
- Carlton Oaks Drive, between West Hills Parkway and Stoyer Drive;
- Cottonwood Avenue, between Park Avenue and Prospect Avenue;
- ~~Cuyamaca Street, between northern terminus and Princess Joann Road;~~
- El Nopal, between Magnolia Avenue and eastern city limits;
- Fanita Drive, between Prospect Avenue and southern city limits;
- Graves Avenue, between Prospect Avenue and southern city limits;
- Halberns Boulevard, between Lake Canyon Road and Stoyer Drive;
- Mast Boulevard, between Magnolia Avenue and Los Ranchitos Road (with no Mast Boulevard extension option);
- Mesa Road, between Mission Gorge Road and Prospect Avenue;
- Olive Lane, between Mission Gorge Road and Prospect Avenue;
- Prospect Avenue, between Mesa Road and Magnolia Avenue;
- N. Woodside Avenue, between Woodside Avenue and eastern city limits;
- S. Woodside Avenue, between Woodside Avenue and eastern city limits.

- Rancho Fanita Drive, between Mission Gorge Road and Big Rock Road;
- Riverpark Drive, between Willow Pond Road and Cuyamaca Street;
- Riverwalk Drive, between Cuyamaca Street and Park Center Drive;
- Rumson Drive, between western terminus and Pebble Beach Drive;
- Settle Road, between Ganley Road and Lake Canyon Road;
- Shadow Hill Road, between S. Woodside Avenue and Ruocco Drive;
- Strathmore Drive, between northern terminus and Settle Road;
- South Slope Drive, between Prospect Avenue and Mesa Heights Road;
- Stoyer Drive, between Carlton Hills Boulevard and Carlton Oaks Drive;
- Summit Avenue between Magnolia Avenue and Princess Joann Road;
- Timberlane Way, between Woodglen Vista and Beck Drive;
- Tyler Street, between northern terminus and southern terminus;
- Wethersfield Road, between Rumson Drive and Inverness Road;
- Willow Pond Road, between Carlton Oaks Drive and Mission Creek Drive; and
- Woodglen Vista Road, between Cuyamaca Street and Magnolia Avenue.

Parkway

Parkway are roadways requiring unique design applications where standard designs cannot be utilized because of steep terrain, right-of-way constraints, special development needs and/or other special conditions. Due to significant variation among parkway cross-sections, a typical cross-section is not provided. The following Mobility Element roadways have been designated as Parkway:

- Cuyamaca Street, between northern terminus and Chaparral Drive;
- Cottonwood Avenue*, between Street "A" and Riverview Parkway;
- Fanita Parkway*, between northern terminus and ~~Mast Boulevard;~~Lake Canyon Road;
- Magnolia Avenue*, between Cuyamaca Street and Princess Joann Road;
- Park Center Drive, between Mast Boulevard and Street "A";
- Riverview Parkway, between Mission Gorge Road and Magnolia Avenue;
- Street "A"*, between Park Center Drive and Magnolia Avenue;
- Town Center Parkway*, between Mission Gorge Road and Riverview Parkway.

* The Mobility Element identifies general and approximate locations for future routes to be dedicated and constructed pursuant to development. Precise alignment and design of these routes will require in depth study at the time that future development occurs.

Multi-Modal Corridors

To support AB 1358 (the Complete Streets Act) and create a vibrant town center, a system of multi-modal corridors was developed in the town center area with mixed land uses and a regionally significant transit center to encourage walking, biking and riding transit. The following roadway segments were designated to be Multi-Modal Corridors since they provides connectivity between the town center / transit center and the surrounding residential land uses:

- Prospect Avenue, between Olive Lane and Magnolia Avenue;

development in the East Elliot area of the City of San Diego could place a demand on City park facilities in this area of the City.

Recreational facilities in this quadrant include the Santee Lakes Regional Park, Mast Park, West Hills Park, Carlton Hills Golf Course, West Hills High School and three elementary school playgrounds. This quadrant of the City is also adjacent to, and served by, existing and planned recreational opportunities and facilities in Mission Trails Regional Park.

The completion of the Mast Boulevard bridge extension and the recent approval of a new pedestrian access into the Santee Lakes on the east side of the bridge has given residents in this area easier access to recreational facilities at the lakes and in the rest of the City.

This area will also be close to planned park facilities in the Fanita Ranch area~~, particularly the planned community park which will be located at the northern end of Carlton Hills Blvd~~. This area will also benefit from establishment of a trails system in the Fanita Ranch and connections to regional trail systems linking Mission Trails with Goodan Ranch and the Sycamore Canyon Open Space Preserve.

Northeast Quadrant - The area north of Mission Gorge Road and east of Cuyamaca Street contains a good amount of recreational acreage. Included are Woodglen Vista Park, Town Center Community Park (under construction) and elementary and high school facilities.

The Parks and Recreation Facilities Master Plan identifies a need for additional passive and active recreational facilities in this quadrant. As is the case with the northwest quadrant, this area of the City will also benefit from future park facilities in the Fanita Ranch. This quadrant will also have access to planned trails, a designated school site, and a new Community Park in the Fanita Ranch and within the City's planned Multiple Species Conservation Program Subarea Plan.

Southwest Quadrant - The southwest quadrant of the City, south of Mission Gorge Road and west of Cuyamaca Street, contains a large amount of regional park acreage (Mission Trails Regional Park) but limited local public parkland acreage and facilities. Big Rock Park, the Renzulli school site (with softball facilities) and two elementary school playgrounds comprise the existing recreational facilities. Another potential recreational area exists along Forester Creek. A trail linking with the San Diego River and a bicycle rest stop are being included in the design of the future flood control improvements planned for the creek.

The City's Parks and Recreation Facilities Master Plan concludes that additional active recreational facilities may be needed in the future to serve this area.

Other Areas

Town Center Specific Plan Area - The Town Center Specific Plan was adopted in 1986 and contains extensive trail systems for bicycle, pedestrian and equestrian users. Except for routes along the San Diego River, Cuyamaca Street and Cottonwood Avenue, no trails are proposed in this Element for the Town Center area. This area is master planned through the Town Center Specific Plan, which contains a comprehensive trail system which links destinations within the Town Center area as well as connecting to the planned trail network in the rest of the City.

Multiple Species Conservation Program Subarea Plan area - Once adopted, this planned preserve area will cover one-quarter of the City, including areas within the Fanita Ranch, along the San Diego River and other areas discussed separately in this Element. The majority of the land within the City's preserve plan is under private ownership and is not currently accessible to City residents. The preserve will be established incrementally and presents an opportunity to provide access to an extensive system of existing unimproved trails. While some of the trail system in the preserve, such as the portion within the Fanita Ranch, will be planned as part of development, much of the remaining system will be established as preserve lands are acquired. The City should place a priority on using existing trail alignments in the preserve to minimize impacts to existing landforms and habitat. Establishment of a trail system in the preserve will be consistent with the City's Multiple Species Conservation Program Subarea Plan and Implementing Agreement.

Fanita Ranch - ~~The~~ Fanita Ranch will contain an extensive trail system. ~~Except for a route along Cuyamaca Street, no trails are proposed in this Element for Fanita Ranch, although future connections to trails within the Ranch are established. This area will be master planned and it is intended that when t~~The Specific Plan for Fanita Ranch, in conjunction with the Multiple Species Conservation Program, will establish a~~plan is adopted it will contain its own~~ trail system plan that will integrate with planned trails in ~~the rest~~other parts of the City. ~~The Trails Element may be amended at the time of master plan adoption to reflect the added trails within Fanita Ranch. Provision of a trails system is one of the "Essential Elements" for the Fanita Ranch discussed in the Land Use Element.~~

riparian vegetation. The channel has been improved as a fully naturalized earthen channel between Mast Park and Cuyamaca Street and ongoing sand mining occurs in the stretch east of Magnolia Avenue.

Riparian/wetland communities are considered to be significant wildlife habitat, particularly for bird species including the Least Bell's Vireo. This resource is declining rapidly in San Diego County and should be protected and enhanced in order to preserve the diverse native wildlife that it supports. There are over 300 acres of wetland vegetation communities in the City, concentrated primarily along the San Diego River and Sycamore Creek. Very little riparian vegetation remains along Forester Creek, although restoration and habitat enhancement are planned as part of the City's Forester Creek Improvement Project. Freshwater aquatic vegetation is found around man-made ponds in Sycamore Canyon (Santee Lakes) and the San Diego River bed. This freshwater habitat is considered valuable to wildlife particularly in combination with streamside woodlands.

There are several areas within the City of Santee that remain relatively undisturbed by urban development and contain adequate resources to support "high interest" floral or fauna species. These areas are depicted in Figure 6-3, and described below.

San Diego River - This corridor bisects the City from east to west, containing approximately 1,000 acres of natural and disturbed habitat. This corridor also functions as an important continuous wildlife corridor through the City. Tributaries to the San Diego River (e.g., Sycamore and Forester Creek) are important complements to this habitat, although habitat value in Forester Creek is somewhat degraded. Sand extraction in the central and eastern portion of the San Diego River has both disturbed (through mining) and enhanced (through ponding) valuable aquatic habitats.

Sycamore Canyon - This drainage is the most biologically significant tributary to the San Diego River within the City of Santee. The man-made Santee Lakes and water treatment ponds along Sycamore Creek, which parallel the northwestern City boundary, provide important aquatic and woodland habitat for a variety of wildlife similar to the San Diego River. Santee Recreational Lakes are considered one of the more popular areas for bird watching in San Diego County. The adjacent woodland drainages and brush cover slopes also are identified as excellent wildlife habitat.

Fanita Ranch - This area occupies ~~2,589~~2,638 acres of the northern quadrant of the City, including portions of Sycamore Canyon. The property contains a diverse mix of vegetation communities including coastal sage scrub, chaparral, vernal pools, freshwater marsh, riparian woodland, and native and non-native grasslands. Sensitive species known to occur on the site include the California gnatcatcher, Cooper's hawk, San Diego horned lizard,

Open space in the presently undeveloped hillside areas should be strategically maintained for hazard avoidance, maintenance of views and resource protection. Site plans and structure designs proposed for existing undeveloped hillside areas should be sensitive to these open space functions and incorporate open space uses as part of the development proposal.

Landforms and Views - Topographic features should be respected and alteration of landforms kept to a minimum except where public safety concerns are overriding ~~and remedial landform alterations are required~~. Where sensitive resources are known to exist, landform alteration shall be minimized to the maximum extent feasible. In this regard, proper siting of land uses in terms of their grading, access and site planning requirements is critical to the success of maintaining topographic resources. Rock outcrops or other unique physical features add points of interest and unique design opportunities. As such, they too should be considered for integration into development proposals as focal points or as part of natural open space systems.

Maintenance of high quality views should be considered in the siting and design features of hillside projects and strategic location of open space. Development within the urban area must frame and enhance view opportunities and not block or create significant negative visual impacts on existing community-level viewsheds.

Surface Water

San Diego River Corridor - The San Diego River corridor provides a major focus for community design within Santee and it should be properly utilized to define an overall theme, character and design strategy for the City. Emphasis should be placed on maintaining and enhancing the existing scenic and environmental resources of the river corridor.

New development along the river corridor should utilize the design elements this natural system presents. Introduction of water elements, greenbelts, view orientation to the river and passive water uses that complement the river system should be included in design proposals to create a varied but consistent theme and character for river corridor development. The ongoing implementation of the Santee River Park Plan must balance the need to maintain the integrity of the natural systems with other community needs.

Sycamore Creek/Santee Lakes Regional Park - The Sycamore Creek/Santee Recreational Lakes corridor supports a wide range of recreational uses, preserves significant habitat, vegetation and open space and provides high quality views. Maintenance of these functions needs to be an integral part of community design strategies. Furthermore, strengthening of its linkage to the San Diego River System should be considered as part of a citywide strategy to enhance water features.

Forester Creek - Forester Creek should play a major role in the development of a contiguous water element system throughout the City. The improvement of Forester Creek should be a model of urban stream restoration, balancing the need for flood control with habitat creation, enhancement of water quality and community recreational needs.

Policy 16.4 The City shall respect the natural stream processes of the San Diego River and its tributaries and ensure that flood control improvements along existing watercourses/channels avoid concrete channelization whenever possible and retain the natural character of the corridor through planting or preservation of native vegetation.

Policy 16.5: The City shall integrate habitat enhancement with recreation opportunities along the San Diego River and its tributaries wherever feasible and practical in meeting recreation and conservation needs.

Objective 17.0 Balance development with natural resource protection needs.

Policy 17.1 The City should provide for the preservation of significant habitat and vegetation in strategic locations along watercourses and in undeveloped hillside areas.

Policy 17.2 The City should promote the incorporation of unique and significant natural resource features (vegetation, habitat, rock outcrops) into development plans.

Policy 17.3 The City will consider special grading standards for master planned communities in hillsides that promote a compact development footprint. Such grading standards shall focus on the edges of the development area and along slopes which are visible from public rights-of-way while allowing for more efficient grading methods within the less visible areas of the development.

8.0 Implementation

8.1 Human Relations

The City shall work with a Human Relations Board, or similar committee or board to develop an on-going strategic plan that strengthens collaborative relationships with other organizations and could include the implementation of programs throughout the community that target youth and the disadvantaged, the development of a crisis intervention program, and the distribution of informational materials.

8.2 Man-made Features

Housing

Architecture

- Vary heights of residential buildings when more than one story to include both one and two story elements.
- Maximize design features which reflect an indoor/outdoor relationship, taking advantage of the conducive climate.
- Ensure architectural mass and form is compatible with adjacent structures and maintenance of views.

Exhibit D: Revised General Plan Guiding Principles for the development of Fanita Ranch.

Guiding Principle 1: The Specific Plan should include a comprehensively planned, high architectural quality, mixed-use Village Center that allows for housing, retail, office and services uses.
Guiding Principle 2: The Specific Plan shall provide a community-focused Village Center that includes provisions for public parks, residential, office, commercial development and institutional uses such as schools, fire station, branch post office, and other civic and community uses.
Guiding Principle 3: The plan shall allow for a diversified mix of housing types and sizes.
Guiding Principle 4: The Land Use Plan, Mobility Plan, Trails and Open Space Plan, and Illustrative Site Plan shall be sensitive to the preservation of natural land forms and sensitive habitat areas by clustering development to minimize the development footprint and by establishing site specific design standards which provide for development in harmony with the environment.
Guiding Principle 5: The Specific Plan shall permit grading of steep slopes to minimize the development footprint. The plan should include site specific design standards that are sensitive to transitional edges between steep slopes and natural topography where feasible, particularly at the edges of the development area and along slopes visible from the public rights-of-way.
Guiding Principle 6: The Specific Plan shall incorporate smart growth, clustering, and sustainability principles, as practicable, to preserve open space, minimize the consumption of natural resources, conserve water and energy, and promote walkable development.
Guiding Principle 7: The Specific Plan should contain mini-parks, neighborhood parks, and a community park as required by the recommendations of the Recreation Element of the General Plan.
Guiding Principle 8: The plan shall contain a small working farm that demonstrates the use of permaculture techniques.
Guiding Principle 9: The Specific Plan shall include the extension of Fanita Parkway along the western boundary of the property.
Guiding Principle 10: The Specific Plan shall include the extension of Cuyamaca Street into the site, ultimately connecting with Fanita Parkway consistent with the General Plan.
Guiding Principle 11: The Specific Plan shall include a comprehensive system of trails as part of the overall Mobility Plan. Trails shall link with the proposed trails outside the Fanita Ranch, which is consistent with the objectives and standards set forth within the City's adopted Trails Element to the General Plan. Access to Sycamore Canyon County Preserve shall be provided to Santee residents. Trail access shall be subject to the Natural Community Conservation Planning (NCCP) design guidelines and standards.
Guiding Principle 12: The Fanita Ranch area shall not be subdivided until a Specific Plan is adopted by the City of Santee.
Guiding Principle 13: To ensure that proposed development is appropriate, the Specific Plan shall contain schematic or illustrative development plans which show prototypical circulation systems, all proposed land uses, and potential residential product types.

Exhibit E,
EIR Table 4.10-1

Table 4.10-1. Project Consistency with Proposed Guiding Principles for Fanita Ranch

Proposed Guiding Principles (General Plan Amendment)	Consistency Analysis with Proposed Guiding Principles
1. The Specific Plan shall include a comprehensively planned, high architectural quality mixed-use Village Center that allows for housing retail, office and service uses.	The land use plan and development regulations in Chapter 3 of the Fanita Ranch Specific Plan would establish a Village Center in each Village that permits a mix of housing, retail, and office uses. Chapter 6 provides design guidance for the buildings in the Village Centers and establishes a unique design theme that supports the overall community's agrarian design theme.
2. The Specific Plan shall provide a community-focused Village Center that includes provisions for public parks, residential, office, commercial development and institutional uses such as schools, fire station, branch post office, and other civic and community uses.	The Fanita Commons Village Center would include a centralized community hub that would provide housing and everyday retail, services, and civic uses. The Village Center would be located near the proposed school site, parks, and the Farm.
3. The plan shall allow for a diversified mix of housing types and sizes.	Chapter 3 of the Fanita Ranch Specific Plan establishes Village Center, Medium Density Residential, Low Density Residential, and Active Adult land use designations that would allow for a diversified mix of housing types ranging from stacked flats to single-family residences in a variety of configurations and sizes to accommodate a variety of incomes, ages, and abilities and an array of life stages and interests.
4. The Land Use Plan, Mobility Plan, Trails and Open Space Plan, and Illustrative Site Plan shall be sensitive to the preservation of natural land forms and sensitive habitat areas by clustering development to minimize the development footprint and by establishing site specific design standards which provide for development in harmony with the environment.	Development would be clustered into three villages to avoid the most sensitive habitat areas on the site, preserve known wildlife corridors, and maintain a contiguous and connected open space system. The prominent hilltop in Fanita Commons would be preserved in the planned Community Park. Where development would occur on hillsides, grading would be efficient to minimize the grading footprint. Special contour grading techniques would be used at edges and transitions, and landform grading techniques would be used on steep slopes that are visible from the public rights-of-way, identified in the Fanita Ranch Specific Plan as "Public Interest" slopes. In the Habitat Preserve, existing trail alignments would be used to the greatest extent possible. New trails would be added at select locations in the Habitat Preserve to provide connections for recreation, fuel modification and habitat enhancement, and restoration purposes. Trail locations would be carefully coordinated to minimize potential conflicts with sensitive habitat areas.
5. The Specific Plan shall permit grading of steep slopes to minimize the development footprint. The plan should include site specific design standards that are sensitive to transitional edges between steep slopes and natural topography where feasible, particularly at the edges of the development area and along steep slopes visible from the public rights-of-way.	Within the hillside areas where development would occur, grading would be efficient to minimize the grading footprint. Special contour grading techniques would be utilized at edges and transitions to closely mimic the natural contour intervals, and landform grading techniques would be used on steep slopes that are visible from the public rights-of-way to recreate and mimic the flow of natural contours and drainages within the natural surroundings.

Table 4.10-1. Project Consistency with Proposed Guiding Principles for Fanita Ranch

Proposed Guiding Principles (General Plan Amendment)	Consistency Analysis with Proposed Guiding Principles
6. The Specific Plan shall incorporate smart growth, clustering, and sustainability principles, as practicable, to preserve open space, minimize the consumption of natural resources, conserve water and energy, and promote walkable development.	Development would be clustered into three villages to preserve approximately 63 percent of the site as Habitat Preserve and other open space. Within the development footprint, low-impact development techniques are proposed to manage stormwater runoff. Advanced treated water would provide a local, reliable, and sustainable water supply to the Specific Plan Area. Water-efficient landscaping, weather-based irrigation controllers, and water-efficient appliances, fixtures and water closets in all buildings would further conserve water and energy. Energy efficiency would be achieved by planting shade trees, installing energy efficient appliances and utilizing passive building design techniques to minimize heat islands and conserve energy. Solar panels on buildings, on carports, and in other potential locations throughout the community would generate electricity. A comprehensive network of trails and sidewalks would be provided to promote walkability, which would be enhanced by tree-lined walkways, pedestrian-oriented architecture, and other pedestrian-focused amenities.
7. The Specific Plan shall contain mini-parks, neighborhood parks, and a community park as required by the recommendations of the Recreation Element of the General Plan.	Chapter 7 of the Fanita Ranch Specific Plan describes the proposed system of parks and recreation facilities, which consists of Mini-Parks, Neighborhood Parks, and a Community Park consistent with the Santee General Plan.
8. The plan shall contain a small working farm that demonstrates the use of permaculture techniques.	The Fanita Ranch Specific Plan designates 38.2 acres of land for Agricultural uses, including 27.3 acres of consolidated area for the development of a centralized Farm in Fanita Commons. In addition, many of the parks and recreation areas would incorporate edible landscape materials and community gardens. Education programs for homeowners to encourage the use of sustainable and edible vegetation on individual lots would be provided at the Farm. The preferred nearby K–8 school site would provide the school district with the opportunity to incorporate agricultural activities into the education curriculum and explore “farm lab” opportunities, which would give students access to healthy, locally grown food, school gardens, and educational opportunities.
9. The Specific Plan shall include the extension of Fanita Parkway along the western boundary of the property.	The Fanita Ranch Specific Plan provides street improvement standards in Chapter 4, Mobility, that include the extension of Fanita Parkway along the western boundary of the Specific Plan Area.
10. The Specific Plan shall include the extension of Cuyamaca Street into the site, ultimately connecting with Fanita Parkway consistent with the General Plan.	In Chapter 4, the Fanita Ranch Specific Plan provides street improvement standards that include the extension of Cuyamaca Street into the Specific Plan Area, connecting to Fanita Parkway via a new collector street.

Table 4.10-1. Project Consistency with Proposed Guiding Principles for Fanita Ranch

Proposed Guiding Principles (General Plan Amendment)	Consistency Analysis with Proposed Guiding Principles
11. The Specific Plan shall include a comprehensive system of trails as part of the overall Mobility Plan. Trails shall link with the proposed trails outside Fanita Ranch, which is consistent with the objectives and standards set forth within the City's adopted Trails Element to the General Plan. Access to Sycamore Canyon County Preserve shall be provided to Santee residents. Trail access shall be subject to the Natural Community Conservation Planning (NCCP) design guidelines and standards.	Chapter 4 of the Fanita Ranch Specific Plan establishes an extensive trail system that includes multi-purpose trails and sidewalks along the roads and trails in the Open Space areas and Habitat Preserve. This pedestrian circulation system would provide a variety of connections throughout the Specific Plan Area, including access to the Habitat Preserve on the project site and the adjacent open space areas such as Goodan Ranch/Sycamore Canyon County Preserve. Trail access would be subject the requirements and provisions of the NCCP design guidelines and standards.
12. The Fanita Ranch area shall not be subdivided until a Specific Plan is adopted by the City of Santee.	The Fanita Ranch Specific Plan includes provisions for subsequent entitlement applications, including all subdivisions within the Specific Plan Area, which cannot occur until after the adoption of the Fanita Ranch Specific Plan.
13. To ensure that proposed development is appropriate, the Specific Plan shall contain schematic or illustrative development plans which show prototypical circulation systems, all proposed land uses, and potential residential product types.	Prototypical circulation systems are provided in Chapter 4 of the Fanita Ranch Specific Plan. Proposed residential product types for applicable land use districts are described in Chapter 3 of the Fanita Ranch Specific Plan and further described in Chapter 6.

June 8, 2022

Sent via email

City Council
City of Santee
10601 Magnolia Ave.
Santee, CA 92071
clerk@cityofsanteeca.gov

Re: Fanita Ranch Referendum (Agenda Item #10, June 8, 2022 City Council Meeting)

Dear Mayor Minto and City Councilmembers:

These comments are submitted on behalf of the Center for Biological Diversity (the "Center") regarding the City's proposed repeal of Resolution No. 006-2021 (Agenda Item #10, June 8, 2022 City Council Meeting), which repeal would remove the voter referendum on the Fanita Ranch Project General Plan Amendment from the November 2022 ballot. The City should not deprive the voters of the opportunity to vote on the Fanita Ranch Project General Plan Amendment in November.

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 68,000 members and online activists throughout California and the United States. The Center has worked for many years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life for people in the City of Santee.

On September 23, 2020, by Resolution 094-2020, the City Council adopted a General Plan Amendment for the Fanita Ranch Project. On October 29, 2020, the voters of the City of Santee filed a referendum petition with the City Clerk's office seeking a vote to overturn Resolution 094-2020 and thereby rescind the General Plan Amendment. On January 13, 2021, the City Council decided not to repeal the General Plan Amendment, and instead adopted Resolution 006-2021, which submitted the referendum to the voters at the November 8, 2022 General Municipal Election.

On April 26, 2022, after finding that the City violated state law when it approved the Fanita Ranch Project without conducting the requisite environmental review, the San Diego Superior Court ordered the City to rescind all project approvals for the Fanita Ranch Project, including Resolution No. 94-2020, the subject of the referendum. On May 25, 2022, the City Council repealed Resolution 094-2020 in response to the Court's order.

The City now apparently wishes to avoid holding a vote on the Fanita Ranch Project—a vote it already committed to when it decided in January 13, 2021 to submit the referendum to the voters. The City's Staff Report justifies this attempt to avoid voter accountability by urging that a

referendum vote would be a "meaningless act," "legally moot," and "without purpose" because the City has already repealed the subject General Plan Amendment under court order. The conclusion is wrong in several respects. First, the City lacks the discretionary authority to conclude that a qualifying referendum is moot. (*See Widders v. Furchtenicht* (2008) 167 Cal.App.4th 769, 779 [submitting qualifying measures to the voters is a ministerial act].) Additionally, the referendum vote will, in fact, have a legal effect: if voters disapprove of the General Plan Amendment (as is likely), the City will be prohibited by law from enacting similar legislation for one year from the date of the election. (Elec. Code § 9241.) Finally, allowing the voting public to weigh in on the Fanita Ranch Project through an up-or-down vote is a key aspect of participatory decision-making and serves the underlying democratic purpose of California's constitutionally authorized voter referendum process. As the City is aware, Santee voters referended a prior City-approved development on the site of the Fanita Ranch Project in the late 1990s.

The City cannot use its failure to comply with the law when it adopted the General Plan Amendment for the Fanita Ranch Project as a justification avoiding voter accountability and the City's obligations under the Elections Code, which arose after the City decided to place the referendum on the November 2022 ballot. The referendum should remain on the ballot.

Given the possibility that the Center will be required to pursue legal remedies in order to ensure that the County complies with its legal obligations we would like to remind the City of its statutory duty to maintain and preserve all documents and communications that may constitute part of the administrative record of this proceeding. Please include the Center on your notice list for all future City activity relating to the Fanita Ranch Project and do not hesitate to contact the Center with any questions at the number or email listed below .

Sincerely,

Peter J. Broderick,
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Good evening council,

Van Collinsworth, representing Preserve Wild Santee.

It appears the city may now consider the referendum to be “meaningless” given the court has already ruled in our favor.

Considering that 2/3 of Santee voters have already rejected a 3000-unit Fanita Ranch project, if the developer and council actually respected the voters prior decision, then I might agree.

However, the record shows a lack of respect for that landslide decision and further actions attempting to avoid voter input, such as rushing approval of the project in 2020 prior to residents approval of Santee General Plan Protection Measure N.

So I believe the people of Santee have earned the right to decide Fanita Ranch fate. Both by qualifying a referendum that gathered over 6,000 signatures in 3-weeks and also by passing the Santee General Plan Protection Measure N at the 2020 election.

Regardless, a similar project will eventually have to face voters. It is the city’s responsibility to honestly acknowledge that fact. To date, the city has not done so.

Rather than vote, one of our critics suggests we should just defer to the wishes of city founders. But actually the truth is, city founder Jim Bartell, the only city founder that has taken a position on the project, who is also a founder of our General Plan, opposes the project, just as he opposed the prior 3,000-unit project voters rejected.

I am also accused of wanting to “shove high density development down peoples throats”, when in fact my work has given residents the opportunity to make the final decision on inconsistent high-density development due to passing Measure N’s voting requirement.

If anything, it is those of you on this city council that have utilized your power to force inconsistent high-density development upon existing residents. Resident voters demonstrated they understood this fact by revoking your power to unilaterally approve General Plan Amendments.

Finally, this multi-decade stalemate could be resolved in a win-win. The win-win is conservation, 50% of which can be funded by the military program to protect training operations from urban encroachment. That is what happened with the hills above this very chamber - once proposed as the Cheyenne Ranch subdivision - and now is conserved as open space.

Let’s move forward —Thank you.

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ENVIRONMENT

Reporter notebook: Cal Fire San Diego cracks down on flammable vegetation around homes

Battalion Chief Daniel Eagan unloads defensible space equipment at a home on June 27, 2023 in Valley Center, California. (Sam Hodgson/The San Diego Union-Tribune)

By fat, the firefighting agency expects to have completed a three-year campaign to inspect every home in its jurisdiction

BY JOSHUA EMERSON SMITH
APRIL 30, 2024 3:00 PM PT

Firefighters in San Diego have ramped up efforts in recent years to ensure that residents are routinely clearing their properties of flammable vegetation, such as dead plants and highly flammable grasses.

California law requires homeowners in high-fire areas to adhere to landscaping rules within one foot of a property. That includes trimming back tree branches that overhang a road and removing certain ground decks and porches.

While efforts to enforce those rules haven't always been a top priority for the California Department of Forestry and Fire Protection, known as Cal Fire, that could be changing in some regions.

Last year, Cal Fire San Diego inspected nearly 26,000 of the roughly 76,000 parcels the agency oversees throughout unincorporated San Diego County, according to agency data. That's up from the fewer than 10,000 properties visited in 2018.

Cal Fire, with funding from the county, now plans to visit every home throughout its 1.3-million-acre jurisdiction every three years, up from every five years previously. The agency is slated to finish its first cycle of that this October.

World's Coldest portable AC

"The single best thing that we can do for our constituents is get them a defensible space inspection," said Dave Nissen, deputy chief for Cal Fire San Diego. "By narrowing the gap from three to five years, that's a huge step in the right direction."

Efforts to inspect homes in San Diego far outpaced the statewide average in 2020, with Cal Fire visiting just 12 percent of the roughly two-state properties it has jurisdiction over throughout the state. The only local unit that inspected more properties last year was San Bernardino.

Inspectors routinely had to visit homes two, three or four times before some residents cleared their property. However, in about half of cases statewide, a resident was in violation of the defensible space code, Cal Fire never returned for a follow-up visit.

Cal Fire San Diego fared better, coming back more than 60 percent of the time, according to agency data.

Another major issue, especially in Southern California, is encouraging homeowners to retrofit their structures, such as sealing off eaves, as well as installing ember-resistant vents and multipaned windows.

"The more people we can get to harden their homes, whether it's through siding, windows, attic protection through ember vents, all those kinds of things, all those things are great," Nissen said.

Inspection data shows that only about 4 percent of structures in Cal Fire San Diego's jurisdiction have closed eaves, ember-resistant vents and multipaned windows, while statewide that figure is 3 percent.

California is now launching a $200-million pilot program with the Federal Emergency Management Agency to help homeowners pay for the upgrades.

Critics say the effort to harden homes is being shortchanged under Gov. Newsom's unprecedented $5-billion wildfire prevention plan. The blueprint aims to spend more than $500 million on large-scale vegetation treatments that scientific experts say will do little to stop the types of wind-driven blazes that have obliterated tens of thousands of homes since 2015.

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ENVIRONMENT

California's not enforcing wildfire-prevention rules for homeowners, leaving tens of thousands of properties vulnerable to big blazes

Cal Fire seasonal firefighters work alongside California Department of Corrections firefighters to create fuel breaks around homes while also re-certifying their chainsaw training on June 28, 2019 in Crest, California. (Sam Hodgson / San Diego Union-Tribune)

BY JOSHUA EMERSON SMITH

JULY 7, 2019 5 AM PT

David Dugger had just parked his pickup in front of a house in rural San Diego County when the dogs came charging. A second later, a middle-aged woman burst out

of her front door looking fairly agitated in the hot June sun.

Rolling down his window, Dugger explained in a calm voice — cultivated from years as an elementary school teacher — that he was with Cal Fire. He was driving around the agricultural community of Valley Center conducting "defensible space" inspections.

Although Dugger didn't mention it to her, the woman's property was clearly in violation of state rules for landscaping in wildfire-prone communities. Instead, he made a mental note of the tall weeds, the dead vegetation and the tree overhanging the roof.

"My husband's in L.A.," the woman said as her dogs circled the pick-up. "I'd rather wait until he gets back."

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Dugger, 64, has for the last four years worked with Cal Fire's San Diego Unit, trying to encourage residents to trim trees, mow tall grass and bag up dead leaves. According to the law, he could order the woman to clean up the property or face thousands of dollars in citations.

However, knowing Cal Fire's law enforcement unit rarely issues fines for defensible space violations, he takes a more congenial approach and promises to return when it's more convenient.

"We're all about not being punitive," Dugger said. "We have a reputation of maybe being a little bit soft. I think people think they can just wait us out.

"I don't want to poke the bear today with her," he added. "She was ready to go hostile."

Violations of defensible space rules are going unaddressed across the state, according to Cal Fire citation data obtained by The San Diego Union-Tribune through a public records request.

CalFire inspector David Dugger conducts a defensible space inspection at a home in Valley Center on June 12, 2019. (Sam Hodgson / The San Diego Union-Tribune)

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Between 2010 and 2018, Cal Fire conducted hundreds of thousands of inspections but issued just 780 fines. By comparison, the Los Angeles County Fire Department, which does its own inspections, issued more than 1,900 citations in fiscal 2013-14.

Last year, Cal Fire inspected about 128,000 properties and issued just 62 fines, according to the data. More than 17,000 failed to meet the required guidelines but faced no financial repercussions, even after multiple visits by inspectors.

Considering Cal Fire inspects between 10 and 20 percent of the nearly 700,000 parcels in its jurisdiction every year, there are likely tens of thousands of properties throughout the state overgrown with flammable vegetation, putting entire communities at risk.

California's light touch on landscaping rules in wildfire-prone areas

Cal Fire enforces guidelines for maintaining defensible space on private property in most rural communities. Firefighters conducting inspections look for dead and dying vegetation, overgrown trees near homes and excessive leaf litter. However, Cal Fire units inspect only 10 to 20 percent of parcels each year and rarely issue fines for the thousands of homes identified as out of compliance.

County	Parcels	Parcels inspected	Percent of parcels inspected	Compliant	Non-compliant	Citations
Amador-El Dorado	65,493	4,133	6.3%	3,904	227	2
Butte	18,956	5,707	30.1%	5,411	296	0
Fresno-Kings	10,318	3,895	37.7%	2,934	961	0
Humboldt-Del Norte	21,754	2,685	12.3%	1,990	695	0
Lassen-Modoc	19,193	2,577	13.4%	2,522	55	0
Madera-Mariposa-Merced	21,734	4,052	18.6%	3,506	546	0
Mendocino	19,045	1,425	7.5%	1,261	164	0
Nevada-Yuba-Placer	77,510	5,597	7.2%	NA	NA	3
Riverside	35,222	3,231	9.2%	3,175	56	0
San Benito-Monterey	22,193	4,381	19.7%	3,743	638	0
San Bernardino	70,602	16,961	24.0%	11,512	5,449	0
San Diego	**69,184**	**9,870**	14.3%	**9,354**	**512**	**4**
San Luis Obispo	21,949	8,363	38.1%	8,008	355	0
San Mateo-Santa Cruz	29,129	3,507	12.0%	2,870	637	0
Santa Clara	18,350	2,015	11.0%	1,969	45	1
Shasta-Trinity	26,927	8,342	31.0%	8,204	138	0
Siskiyou	11,782	3,006	25.5%	2,971	35	0
Sonoma-Lake-Napa	52,197	6,200	11.9%	5,271	929	0
Tehama-Glenn	8,937	3,621	40.5%	3,427	146	48
Tulare	6,699	6,146	91.7%	5,863	280	3
Tuolumne-Calaveras	49,624	11,716	23.6%	7,860	3,855	1

Source: Cal Fire

MICHELLE GILCHRIST U-T

Research has shown that sloppy landscaping can significantly increase a home's chance of going up in flames during a firestorm.

"Cal Fire pays lip service to defensible space," said Chad Hanson, a fire ecologist and co-founder of the John Muir Project who has been critical of the state's approach to dealing with wildfire. "We should care about this because it makes a huge difference in terms of whether homes survive a fire or not. We know that from numerous scientific studies and case studies."

Cal Fire's top brass in Sacramento declined multiple interview requests for this article.

The agency has made defensible space a central part of its public messaging about wildfire safety, distributing pamphlets and videos on YouTube and its website, readyforwildfire.org.

Officials have pointed to high compliance rates as proof the program is on track. The Cal Fire San Diego Unit, for example, has touted that more than 90 percent of homes inspected in a given year are either following the rules or willing to quickly do the work to come into compliance.

Those visits also serve as a chance for inspectors to point out improvements that residents can make to their homes, such as closing off open eaves and fixing torn vents to prevent embers.

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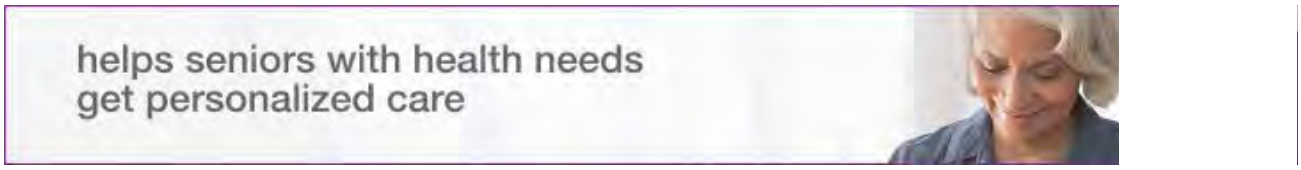

"The under-appreciated aspect of the whole inspection process is that interaction with the homeowner where they get information about structure-ignition vulnerabilities," said Max Moritz, a wildfire specialist with the University of California Cooperative Extension. "That could be the most important reason for inspections."

However, with nearly 70,000 parcels, some with multiple structures, to inspect throughout the county, Cal Fire San Diego's seemingly high compliance rate can still mean there are thousands of homes with serious, unaddressed issues.

Cal Fire authorities in San Diego have acknowledged that they don't have the staffing to ensure every property is being properly maintained.

"When you have 102,000 structures, you don't have the resources to go out there four

times and really follow up," said Cal Fire San Diego Unit spokesman Thomas Shoot. "A lot of times, we get to that point where these people aren't doing their work. Do we continue to invest all our time and energy on this one house, or do we keep chipping away on all the inspections?"

If authorities choose, they can issue a $1,000 fine after an inspectors has visited a site three times and a homeowner fails to comply with the rules, according to Cal Fire San Diego. Fines then increase from $2,500 to $5,000 and can result in a misdemeanor.

Climate change, housing and a success story

As California has suffered larger and more destructive wildfires linked to climate change, lawmakers and top officials have called for a more aggressive approach to protecting the state's roughly 11 million residents who live in the most fire-prone areas.

Gov. Gavin Newsom has convened a wildfire strike force that released a report in April outlining a number of recommendations, from ensuring homeowners are maintaining defensible space to cutting down swaths of vegetation around backcountry communities to holding electrical utilities more accountable when their wires spark blazes.

Still, Newsom has balked at calls from many wildfire experts to block all new home construction in high-risk areas — suggesting in an interview that such a move would run counter to the state's "pioneering spirit."

Elected officials, especially in Southern California, continue to approve thousands of new housing units on undeveloped land that is routinely burned by wildfire. Many of those projects are often vocally supported by Cal Fire leaders.

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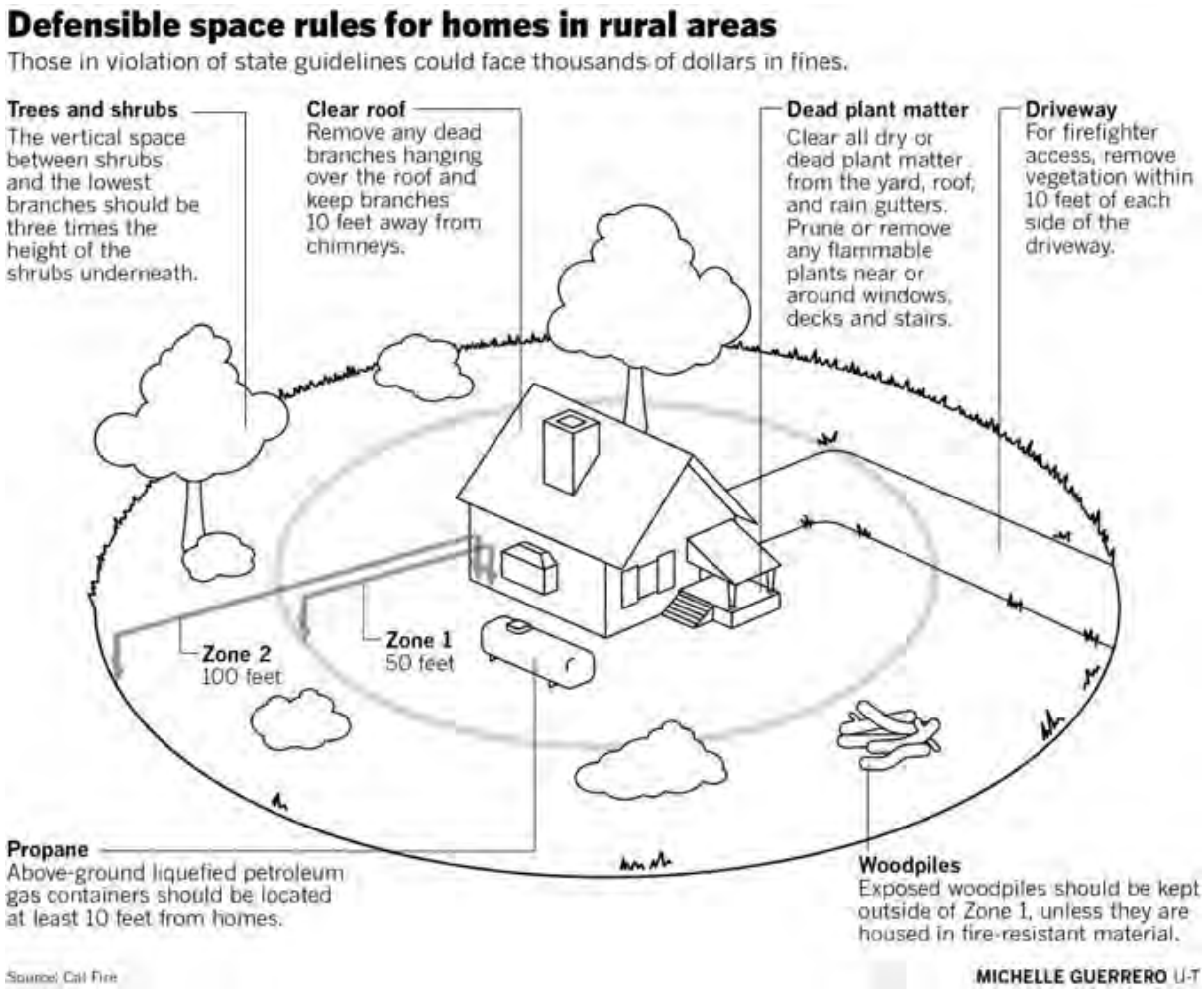
Some critics have argued that advances in fire-resistant construction, such as ember-resistant vents, as well as a heightened focus on defensible landscaping, have become an excuse to build in dangerous areas.



Still, most professionals agree that ensuring vegetation is regularly maintained can go a long way toward saving structures during a wildfire. Large embers can travel a mile or more in front of a large firestorm, peppering homes and igniting dry piles of leaves or other dead vegetation.

"If you're going to let people build anywhere, you're going to have a problem, but defensible space at least gives people a buffer," said Char Miller, an expert on wildfire policy and a professor of environmental analysis at Pomona College. "Any kind of buffer gives you a head start out of your house and down the road."

Los Angeles County saw the value in that buffer and started cracking down about a decade ago on defensible-space violations.

The counties of Ventura, Orange, Santa Barbara, Kern, Marin and Los Angeles have their own fire departments independent of Cal Fire that service more remote areas. The agencies receive state funding rather than being serviced by California firefighters.

Between 2011 and 2014, the Los Angeles County Fire Department issued more than 1,000 fines a year, according to data reported to Cal Fire. Then around 2015, it started to see a dramatic uptick in compliance.

The agency inspects every parcel in its jurisdiction identified as a high risk for fire on a yearly basis, said Brian Stevens, spokesman for the Los Angeles County Fire Department.

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home but the neighbor's and the ones down the street."

However, some regions are more challenging than others. Cal Fire San Diego is responsible for more than three times the number of parcels covered by the Los Angeles County Fire Department.

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While some inspections can be done from the street, sprawling properties and locked gates can make inspections difficult without a homeowner's consent.

Cal Fire inspectors are allowed to enter a driveway, much like a mail carrier or delivery truck driver. However, he or she must leave the property if so instructed by a resident.

CalFire inspector David Dugger conducts defensible space inspections at the home and grapefruit grove of Paul Reeb, 61, on June 12, 2019 in Valley Center. (Sam Hodgson / The San Diego Union-Tribune)

Valley Center inspections continued

After leaving the disgruntled homeowner and her dogs behind, Dugger headed down the road in his gray pickup marked with the Cal Fire logo. He scanned the countryside lined with avocado groves and fruit trees looking for properties to inspect.

"People say, 'What I do on my own property is my own thing,'" he explained. "Well, I'm sorry, what you do impacts your neighbors. All the other best efforts won't apply if that one person is throwing embers everywhere."

After a few minutes, he spotted an open gate and pulled down a dirt driveway. He was quickly met with another homeowner also startled by the tall middle-aged man dressed in a blue uniform and badge.

After about 15 minutes of negotiations, farmer Paul Reeb, 61, agreed to let Dugger on his property. Slowly, he led the inspector through a patch of grapefruit trees to his country home.

Reeb, like many people facing a defensible-space inspection, was worried he might have to foot a hefty landscaping bill. But Dugger reassured him that his property is more or less in order.

"If it's green and alive, that's absolutely quality of life," Dugger said referring to several ornamental bushes and a tree next to the home. "If you're enjoying that, we're not asking you to cut out all that."

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It's clear that Reeb could do some maintenance on his property, especially trimming back a few tree limbs that overhang this home. Dugger later notes this, but offers tips rather than threatening a violation.

"At some point, you may want to see if you can't get some of that leaf litter off the ground," he said. "If an ember gets into that, obviously it's going to want to climb that wall, and you've got open eaves up here."

Eventually, Reeb led Dugger out, explaining that he didn't know the rules were mandatory.

"It's confusing for us, and worrisome, whenever the government shows up," he said. "For whatever reason, the government really doesn't like farmers, and they do everything possible to make sure that your life is miserable.

"What I don't appreciate is being told we have to do it with no mechanism for helping us pay for it," he added.

Still, Reeb seemed satisfied with the inspection, especially after he realized it was not just about him but enforcing the rules for the entire neighborhood.

After the inspection, Dugger recorded his notes on a Cal Fire-issued tablet.

Big data to combat wildfire

A few years ago, Cal Fire employees started collecting a wide suite of information following inspections.

Beyond noting whether a home is out of compliance and why, inspectors have started tracking everything from roof types to the conditions of vents to the materials used to construct a porch or deck.

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The new data collection endeavor has two main purposes — informing firefighters of home conditions during a blaze and, after the event, helping researchers evaluate what features best served to protect structures.

"We haven't had data like that for post-fire analyses, so that's going to be really interesting," said Moritz, with the University of California Cooperative Extension.

At the same time, Cal Fire units are now building digital maps with profiles of inspected properties. During a wildfire, crews will be able to identify the features of a house, as well as whether the property was recorded as having well-maintained defensible space or dangerous landscaping.

That's important because a house with a wood roof, open eaves and dying vegetation can be a significant danger to firefighters rushing into a neighborhood.

"We triage," Dugger said. "When we've got a firestorm and our resources are limited, we may have to say, 'I'm sorry, you're going to put our firefighters in jeopardy. You are actually endangering our firefighters.'"

If a blaze gets large enough, even homes constructed with the latest technologies will be at risk. Cal Fire data has shown that 90 percent of homes destroyed in the Thomas fire that scorched Ventura and Santa Barbara counties in 2018 had fire-resistant roofs. Eighty percent had fire-resistant walls.

"There are a lot of cases in recent fires where pretty much brand-new developments built to code have been destroyed as well," Alexandra Syphard, chief scientist for the La Jolla-based Sage Underwriters, a new wildfire insurance company for homeowners. "What I worry about is people who have a little bit too much confidence in defensible space in protecting them."

Officials are hoping the new data collection campaign can help policymakers figure out what types of landscaping and home construction can most effectively protect lives and property during a blaze.

As the planet heats up, California has grappled with a frightening increase in the frequency of devastating firestorms. Fifteen of the 20 most destructive wildfires in California history have happened in the last two decades — with 10 occurring since 2015.

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ecefola 3 years ago

My neighbor has 2 half cut evergreen pine trees, one is very close to my house by the common fence. I've asked multiple times for him to cut it down. He refuses. Instead he constructs wooden seating on his side of the common fencing! I've lived next to him almost 8 years and he's a poor neighbor. The backyard is mostly dirt and the front has flower pots in dirt that's uncovered. The HOA does zero.
Saran Ct., Oceanside, 92056 Help!

Respect Reply Share Report

---

debylutz 3 years ago

Yeah. And I get to subsidize these irresponsible property-owners through my taxes and insurance premiums. Not to mention how these irresponsible property-owners subject first-responders to injury and death in defense of their irresponsibly-managed properties.

Respect 1 Reply Share Report

Ben Giley 3 years ago

Writing a second time since my comment exposing this corrupt newspaper was deleted the first time.

The UT writes pro building articles for fire zone areas and then criticizes the government for not fining those developments. More proof that the building industry funds this newspaper to write biased articles in their favor.

Respect 1 Reply Share Report

---

voyager2k 3 years ago

State should upgrade building codes to include stronger fire resistant materials and design to further reduce the chances of a home burning.

Also agree the insurance companies need to get involved by inspecting their client's homes for fire safety. More fire safe they make it, the lower the rates. Fail and you risk higher rates or being dropped.

Your call home owners.

Respect 1 Reply Share Report

---

outdoor guy 3 years ago

All the defensible space clearing means so very little in a typical wind driven fire event. These defensible space clearings and inspections are the same thing we have been doing for the last 50 years and it just doesn't work when you are surrounded by 40 year

old chaparral or have a hands off open space easement running through the heart of your neighborhood. We need 300" wide fuel breaks combined with landscape scale vegetation fuel reduction if we are going to have any real protections from wildfire events. Every preserved managed open space park, environmental easement, brushing (prevention) ordinances makes our communities less safe. Time to review these rules and the areas they overlay.

Respect 1 Reply Share Report

D Merrill 3 years ago

Insurance companies need to drop people that refuse to comply with keeping defensible space. This is not about "I can do what I want on my property", it's about the safety of all. The continual rubber stamping of every new subdivision, ignoring lack of adequate access, infrastructure, and destruction of open space, especially on terrain that should not be built on, (Otay Ranch 14 being the most recent example) is a big problem that will not stop because of the insatiable need to feed the pig. "Building to code" has little bearing on location. Not every scrap of land should be built on.

Respect 1 Reply Share Report

Pzilinsky 3 years ago

Its clear by this article that the Governor puts the peoples interests before preserving natural habitat. Allowing the building of homes in undeveloped areas coupled with the defensible space requirement destroys natural habitat and impacts much needed biodiversity.

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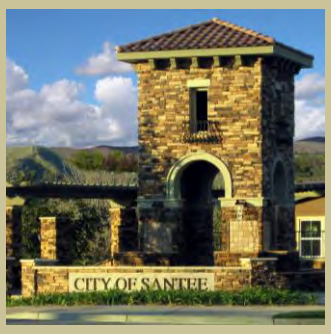

HOUSING
ELEMENT

CITY OF SANTEE

DRAFT HOUSING ELEMENT
2021-2029

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Section 1: Introduction

A. Purpose and Content of Housing Element

The Housing Element of the General Plan is designed to provide the City with a coordinated and comprehensive strategy for promoting the production of safe, decent, and affordable housing within the community. California Government Code Section 65580 states the intent of creating housing elements:

> *The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian, including farmworkers, is a priority of the highest order.*

Per State law, the Housing Element has two main purposes:

(1) To provide an assessment of both current and future housing needs and constraints in meeting these needs; and

(2) To provide a strategy that establishes housing goals, policies, and programs.

The Housing Element is an eight-year plan for the 2021-2029 period. The Housing Element serves as an integrated part of the General Plan, but is updated more frequently to ensure its relevancy and accuracy. The Housing Element identifies strategies and programs that focus on:

(1) Matching housing supply with need

(2) Maximizing housing choice throughout the community

(3) Assisting in the provision of affordable housing

(4) Removing governmental and other constraints to housing investment

(5) Promoting fair and equal housing opportunities

The Housing Element consists of the following major components:

- A profile and analysis of the City's demographics, housing characteristics, and existing and future housing needs (**Section 2, Community Profile**).
- A review of the constraints to housing production and preservation. Constraints include potential market, governmental, policy, and environmental limitations to meeting the City's identified housing needs (**Section 3, Housing Constraints**).
- An assessment of resources available to meet the City's objectives regarding housing production and preservation. Resources include land available for new construction and redevelopment, as well as financial and administrative resources available (**Section 4, Housing Resources**).
- A statement of the Housing Plan to address the City's identified housing needs, including housing goals, policies and programs (**Section 5, Housing Plan**).

In addition, the Housing Element contains a number of appendices:

Appendix A: Public Participation – Summarizes the outreach efforts for the development of the Housing Element.

Appendix B: Accomplishments under Adopted Housing Element – Assesses the effectiveness and continued appropriateness of the housing programs set forth in the fifth cycle Housing Element.

Appendix C: Sites Inventory – Provides detailed information of the selected sites for RHNA.

Appendix D: Undeveloped/Underutilized General Industrial (IG) Sites – Updates the status of available parcels for emergency shelters.

B. State Requirements

State law requires housing elements to be updated periodically to reflect a community's changing housing needs. A critical measure of compliance with the State Housing Element Law is the ability of a jurisdiction to accommodate its share of the regional housing needs – Regional Housing Needs Assessment (RHNA). For the San Diego region, the regional growth projected by the State was for the period between June 30, 2020 and April 15, 2029. However, the Housing Element is an eight-year document covering the planning period from April 15, 2021 to April 15, 2029. The City's RHNA and resources available to meet the RHNA are discussed in **Section 4, Housing Resources**.

The RHNA is based, in part, upon the growth that the San Diego Association of Governments (SANDAG) has estimated for the City of Santee in its 2050 Regional Growth Forecast. This forecast was adopted in 2013 and is based on current adopted land use plans and policies. SANDAG forecasts that Santee will grow to 66,313 residents and 23,886 housing units by 2050.

C. Data Sources and Methodology

In preparing the Housing Element, various sources of information were consulted. These include:

- Census 2010 and American Community Survey (ACS) data
- Housing market data from Corelogic
- Employment data from the California Employment Development Department
- Lending data from financial institutions provided under the Home Mortgage Disclosure Act (HMDA)
- Recent data available from service agencies and other governmental agencies

D. General Plan Consistency

The City of Santee General Plan 2020 was adopted on August 23, 2003 and is comprised of the following nine elements: Land Use; Housing; Mobility; Recreation; Trails; Conservation; Noise; Safety; and Community Enhancement. The Housing Element is being updated at this time in conformance with the 2021-2029 update cycle for jurisdictions in the SANDAG region and has been reviewed with the rest of the General Plan to ensure internal consistency. As portions of the General Plan are amended in the future, the Plan (including the Housing Element) will be reviewed to ensure that internal consistency is maintained.

Pursuant to new State law, the City is updating the Safety Element concurrent with the Housing Element update to include an analysis of fire, flood, geologic, seismic, traffic and public safety hazards and policies to reduce the potential loss of life from these hazards. The Safety Element will address new State requirements including environmental justice issues and climate change adaptation and resilience. This update is anticipated to be completed by January 2022.

Section 2: Community Profile

The City of Santee incorporated in 1980. Santee is an urbanized community developed primarily in the 1970s and 1980s. Located in the eastern part of the San Diego metropolitan area, Santee is bordered by El Cajon on the south and southeast, the City of San Diego on the west and northwest, and the County of San Diego on east and northeast.

Most of the City's residentially zoned land has already been developed with a diversity of housing types, including single-family homes, mobile home parks, townhomes, condominiums and apartments. However, several hundred acres within the Specific Plan District and the Town Center District remain undeveloped and available for future housing development.

A. Population Characteristics and Trends

The following section describes and analyzes the various population characteristics and trends in Santee that affect housing need.

1. POPULATION GROWTH

According to the Census, Santee's population rose by almost nine percent from 53,413 in 2010 to 57,999 in 2020 (Table 1). The San Diego Association of Governments (SANDAG) forecasts that the Santee population will reach 63,812 by the year 2035. This represents a growth of 10 percent or 5,813 people.

Table 1: Population Growth

Jurisdiction	Population				% Change 2010-2020	Projected % Change 2020-2035
	2000	2010	2020	2035 (Projected)		
El Cajon	94,819	99,478	104,393	109,383	4.9%	4.8%
La Mesa	54,749	57,065	59,966	70,252	5.1%	17.2%
Lemon Grove	24,954	25,320	26,526	28,673	4.8%	8.1%
San Diego	1,223,400	1,301,617	1,430,489	1,665,609	9.9%	16.4%
Santee	**53,090**	**53,413**	**57,999**	**63,812**	**8.6%**	**10.0%**
San Diego County	2,813,833	3,095,313	3,343,355	3,853,698	8.0%	15.3%

Sources: Census 2000 and 2010; California Department of Finance, 2020; and SANDAG 2050 Series 13 Regional Growth Forecast (data extracted on 07/2020).

2. AGE COMPOSITION

The age structure of a population is also an important factor in evaluating housing and community development needs and determining the direction of future housing development. Typically, each age group has distinct lifestyles, family types and sizes, incomes, and housing preferences. As people move through each stage of life, housing needs and preferences change. For example, young householders without children will have different housing preferences than middle-age householders with children or senior householders living alone. Consequently, evaluating the age characteristics of a community is important in determining the housing needs of residents.

Santee's population is, as measured by the median age of its residents, older than in neighboring communities and the County as a whole. In 2018, Santee's median age was 38.8 years, while the County's median age was 35.6. The proportion of residents aged 65+ in Santee (14 percent) was the second highest among its neighbors, but saw the highest increase in the past 10 years from 11 percent to 14 percent (see Figure 1). The proportion of residents under 18 was consistent with countywide average (Table 2).

Table 2: Age Characteristics (2018)

Jurisdiction	Under 18 years		65+ years		Median Age 2010	Median Age 2018
	2010	2018	2010	2018		
El Cajon	25.7%	25.4%	11.0%	11.9%	33.7	32.4
La Mesa	19.6%	20.7%	14.2%	14.4%	37.1	37.6
Lemon Grove	25.5%	25.3%	11.2%	12.9%	35.0	35.4
San Diego City	21.4%	20.1%	10.7%	12.3%	33.6	34.7
Santee	**23.8%**	**21.6%**	**10.7%**	**14.2%**	**37.2**	**38.8**
San Diego County	23.4%	22.0%	11.4%	13.3%	34.6	35.6

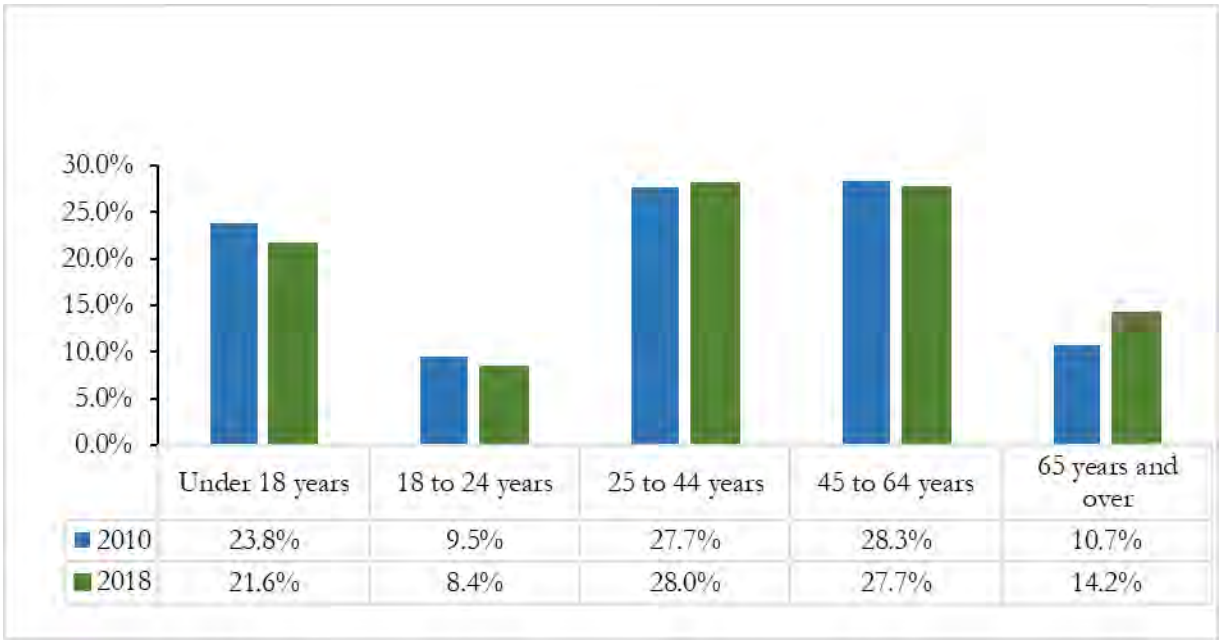
Sources: Census 2010; American Community Survey (2014-2018 Estimates)

As shown in Table 2, a shift in the ages of Santee residents occurred between 2010 and 2018. The child population decreased slightly while the senior population increased by 3.5 percentage points. These changes in age structure represent a significant change in the age composition of Santee towards an aging population, which could affect the housing needs of Santee residents during the planning period.

This trend has been taking place since 1990, when only eight percent of Santee residents were 65+. From 2000 to 2010, the proportion of Santee residents over 65 increased also increased from nine percent to 11 percent. Overall, the senior population in Santee has increased by 6 percentage points in the past 30 years. At the same time, the proportion of Santee residents under the age of 18 has declined dramatically, from 29 percent in 1990 to 22 percent in 2018.

A decrease in residents aged 18-64 has also taken place in the last decade, with this age group decreasing from 66 percent to 64 percent of the population. Both young adult residents and older adults saw slight decreases between 2010 and 2018 while adults aged 25 to 44 saw a minimal increase (Figure 1). As a result, Santee's median age rose by 1.6 years between 2010 and 2018. These changes match the general trends seen in San Diego County in the past 10 years, but they are more pronounced in Santee.

Figure 1: Age Distribution (2010 and 2018)



	Under 18 years	18 to 24 years	25 to 44 years	45 to 64 years	65 years and over
2010	23.8%	9.5%	27.7%	28.3%	10.7%
2018	21.6%	8.4%	28.0%	27.7%	14.2%

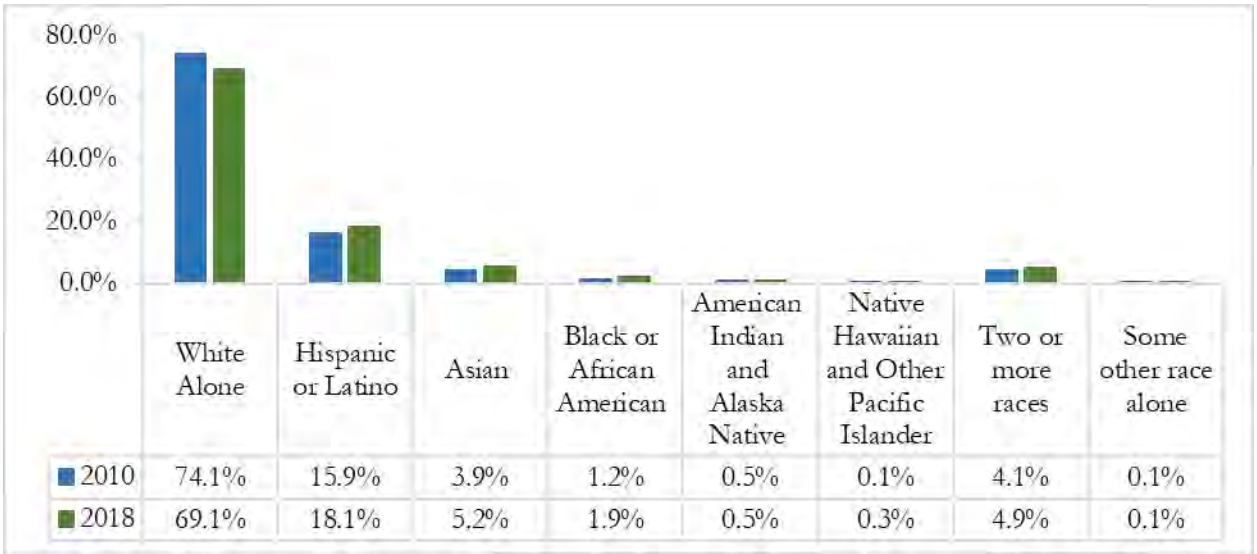
Sources: Census 2010; American Community Survey (2014-2018 Estimates)

3. RACE AND ETHNICITY

Different racial and ethnic groups often have different household characteristics, income levels, and cultural backgrounds, which may affect their housing needs and preferences. Studies have also suggested that different racial and ethnic groups differ in their attitudes toward and/or tolerance for "housing problems" as defined by the Federal Department of Housing and Urban Development (HUD), including overcrowding and housing cost burden. According to these studies, perceptions regarding housing density and overcrowding tend to vary between racial and ethnic groups. Especially within cultures that prefer to live with extended family members, household size and overcrowding also tend to increase. In general, Hispanic and Asian households exhibit a greater propensity than White households for living in extended families. However, with the housing crisis in California, and the recent economic challenges presented by COVID-19, extended family members sharing housing arrangements or adult children moving back with parents have become a trend in many California communities.

The racial composition of Santee residents in 2018 was 69 percent White, 18 percent Hispanic, five percent Asian, two percent Black, five percent for those who declared more than one race, and less than once percent for American Indian/Alaskan and Hawaiian/Pacific Islander (Figure 2). Between 2010 and 2018, the proportion of all races/ethnicities increased while the White population decreased. Hispanic and Asian population had the greatest proportional increases.

Figure 2: Race (2010 and 2018)



Sources: Census 2010; American Community Survey (2014-2018 Estimates)

Despite these decreases in White population, Santee continues to have a substantially larger proportion of White residents and smaller proportion of Hispanic/Latino residents compared to neighboring jurisdictions and the County as a whole (Table 3). The City's proportion of Black/African Americans is also significantly lower than surrounding cities and within the County.

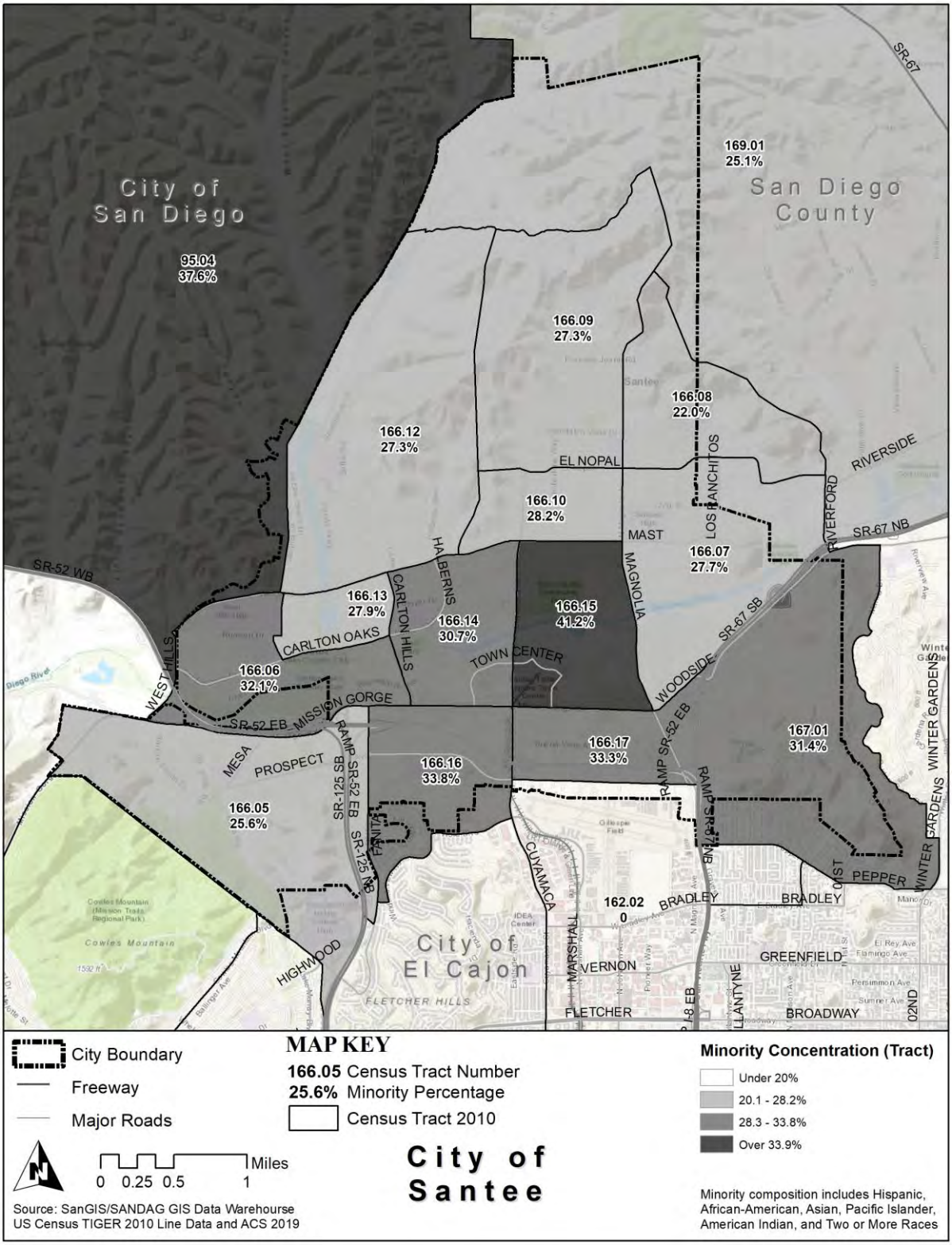
Table 3: Racial Composition in Neighboring Cities and Region (2018)

Jurisdiction	White Alone	Black	American Indian/ Alaskan	Asian	Hawaiian/ Pac Islands	Other	Two or More	Hispanic/ Latino
El Cajon	57.1%	5.5%	0.2%	3.7%	0.4%	0.3%	4.3%	28.5%
La Mesa	55.5%	7.1%	0.1%	6.5%	0.3%	0.1%	4.6%	25.9%
Lemon Grove	28.9%	13.5%	0.1%	6.0%	0.4%	0.1%	4.2%	46.7%
San Diego	42.9%	6.2%	0.2%	16.4%	0.4%	0.2%	3.6%	30.1%
Santee	**69.1%**	**1.9%**	**0.5%**	**5.2%**	**0.3%**	**0.1%**	**4.9%**	**18.1%**
County	45.9%	4.7%	0.4%	11.6%	0.4%	0.2%	3.4%	33.5%

Source: American Community Survey (2014-2018 Estimates).

Figure 3 shows the distribution of minority populations in Santee. Minority individuals comprise between 27 and 34 percent of the population in most Census tracts in the City. However, there is one tract (166.08) in the northeastern portion of the community with 22 percent minority, and one tract (166.15) in the center of the City where minorities are highly concentrated (41 percent of tract population).

Figure 3: Minority Concentration Areas (2018)



B. Employment Profile

An assessment of the needs of the community must take into consideration the type of employment held by City residents. Incomes associated with different jobs and the number of workers in a household determines the type and size of housing a household can afford. In some cases, the types of jobs themselves can affect housing needs and demand (such as in communities with military installations, college campuses, and seasonal agriculture). Employment growth typically leads to strong housing demand, while the reverse is true when employment contracts.

1. Occupation and Labor Participation

The American Community Survey (ACS) provides information about employment, specifically the number of City residents by industry type, who are employed by businesses either outside or within their community. As of 2018, Educational Services/Health Care/Social Assistance and Professional/Scientific/Management services were the two largest occupational categories for City residents (Table 4). These categories account for almost 37 percent of the jobs held by employed residents. Similarly, these categories accounted for 36 percent of jobs held by County residents. The proportion of City residents in all other occupations was roughly similar to the occupation profile of County residents, with a higher proportion of Santee residents being employed in construction and retail.

Table 4: Employment Profile (2018)

Sector	Santee		San Diego County	
	Estimate	Percent	Estimate	Percent
Educational services, and health care and social assistance	6,743	23.8%	332,860	21.3%
Professional, scientific, and management, and administrative and waste management services	3,630	12.8%	236,691	15.1%
Retail trade	3,466	12.2%	163,799	10.5%
Arts, entertainment, and recreation, and accommodation and food services	2,633	9.3%	186,676	11.9%
Construction	2,316	8.2%	91,902	5.9%
Manufacturing	2,295	8.1%	144,583	9.2%
Finance and insurance, and real estate and rental and leasing	1,845	6.5%	97,145	6.2%
Public administration	1,710	6.0%	78,150	5.0%
Other services, except public administration	1,351	4.8%	84,047	5.4%
Transportation and warehousing, and utilities	1,162	4.1%	63,842	4.1%
Wholesale trade	612	2.2%	37,263	2.4%
Information	541	1.9%	34,501	2.2%
Agriculture, forestry, fishing and hunting, and mining	13	0.0%	13,471	0.9%
Totals		28,317		1,564,930

Source: American Community Survey (2014-2018 Estimates)

Management occupations were the highest paid occupations in the San Diego region in the first quarter of 2020, and had a 17 percent increase in average yearly salaries from 2011 to 2020 (Table 5). Even with a 44 percent increase in average salary, food preparation and related services remained the lowest paid occupation in the County. Overall, average yearly salaries for all occupations increased by 8.4 percent.

Table 5: Average Yearly Salary by Occupation, San Diego County (2011 and 2020)

Occupation	Salary		% Change (2011-2020)
	2011	2020	
Management	$117,046	$136,531	16.6%
Legal	$105,882	$120,265	13.6%
Computer and Mathematical	$82,631	$104,627	26.6%
Healthcare Practitioners and Technical	$89,872	$102,053	13.6%
Architecture and Engineering	$83,115	$99,949	20.3%
Life, Physical, and Social Science	$77,716	$87,579	12.7%
Business and Financial Operations	$71,815	$80,850	12.6%
Educational Instruction and Library	$60,992	$66,690	9.3%
Total all occupations	**$50,800**	**$61,770**	**8.4%**
Arts, Design, Entertainment, Sports, and Media	$56,963	$61,614	8.2%
Construction and Extraction	$51,871	$60,047	15.8%
Protective Service	$50,581	$58,837	16.3%
Community and Social Services	$49,734	$56,793	14.2%
Installation, Maintenance, and Repair	$45,202	$54,945	21.6%
Sales and Related	$38,263	$45,974	20.2%
Office and Administrative Support	$37,260	$45,385	21.8%
Production	$34,324	$43,823	27.7%
Transportation and Material Moving	$32,255	$39,362	22.0%
Building and Grounds Cleaning and Maintenance	$30,880	$36,248	34.6%
Healthcare Support	$26,928	$35,609	15.3%
Personal Care and Service	$26,240	$34,806	32.6%
Farming, Fishing, and Forestry	$26,009	$33,243	27.8%
Food Preparation and Serving-Related	$22,133	$31,942	44.3%

Source: California Employment Development Department, Occupational Employment Statistics (OES) Q1, 2011, Q1, 2020.

C. Household Characteristics

The Census defines a household as all persons who occupy a housing unit, which may include single persons living alone, families related through marriage or blood, and unrelated individuals living together. Persons living in retirement or convalescent homes, dormitories, or other group living situations are not considered households. Information on household characteristics is important to understand the growth and changing needs of a community.

1. HOUSEHOLD TYPE

According to the ACS, 19,650 households were located in Santee in 2018. Of these households, 21 percent were single-person households (no change from the 2010 Census), and households headed by seniors (65+) comprised 25 percent, an increase of nearly six percentage points since the 2010 Census. Single-person households represented a lower proportion of Santee's households than in neighboring jurisdictions and countywide. Conversely, 34 percent of Santee households consisted of families with children, a larger proportion than found in neighboring San Diego City and La Mesa but similar to the County (Table 6). When compared to Census 2010 numbers, Santee's household composition is slowly trending toward senior-headed households and away from families with children and large households.

Table 6: Household Characteristics (2018)

Jurisdiction	Single Person Households	Senior Headed Households	Families with Children	Single-Parent Households	Large Households	
					Owner-Occupied	Renter-Occupied
El Cajon	21.3%	19.4%	40.1%	11.1%	4.3%	10.8%
La Mesa	31.3%	24.6%	29.3%	9.1%	2.7%	3.7%
Lemon Grove	21.9%	25.2%	38.5%	11.4%	10.1%	6.5%
San Diego	27.4%	19.8%	29.1%	7.5%	4.6%	5.3%
Santee	**21.0%**	**24.6%**	**33.7%**	**4.9%**	**5.9%**	**3.5%**
San Diego County	23.7%	22.3%	33.1%	8.3%	6.0%	5.9%

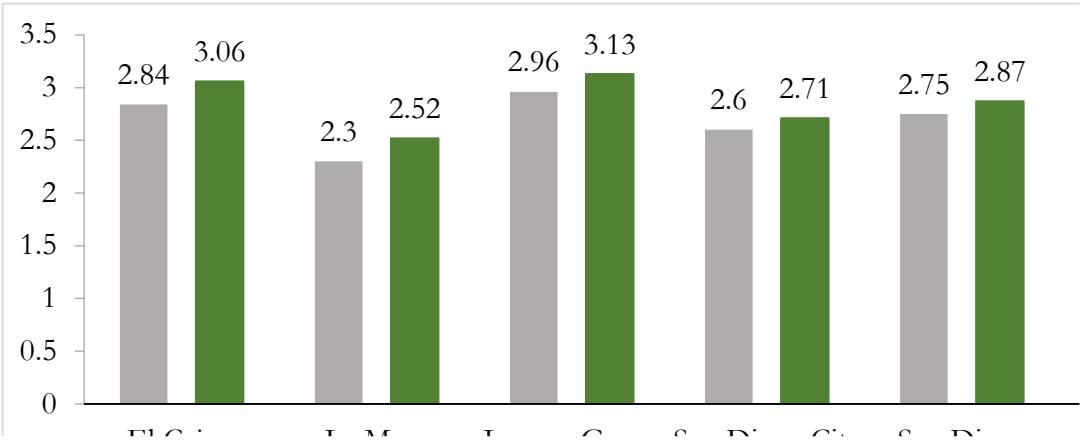
Source: American Community Survey (2014-2018 Estimates)

Different household types generally have different housing needs. Seniors or young adults typically comprise the majority of single-person households and tend to reside in apartment units, condominiums, or smaller single-family homes. Families often prefer single-family homes. Santee's housing stock provides a range of unit types to meet the needs of its residents (Table 13). Roughly, 65 percent of the City's housing stock is comprised of single-family units, while approximately 24 percent of the units consist of multifamily units such as apartments and condominiums (Source: American Community Survey).

2. HOUSEHOLD SIZE

Household size identifies sources of population growth and household overcrowding. A city's average household size will increase over time if there is a trend towards larger families. In communities where the population is aging, the average household size may decline. The average household size in Santee in 2018 was 2.83, an increase from the 2.72 of the 2010 Census, and slightly lower than the County as a whole (2.87) (Figure 4). The County also had a similar increasing household size trend, increasing from 2.75 to 2.87 from 2010 to 2018.

Figure 4: Household Size (2010 and 2018)



Sources: 2010 Census and 2014-2018 ACS

3. HOUSEHOLD INCOME

Household income is an important consideration when evaluating housing and community development needs because lower income typically constrains a household's ability to secure adequate housing or services. While housing choices, such as tenure (owning *versus* renting) and location of residences are very much income-dependent, household size and type often affect the proportion of income that can be spent on housing.

According to SANDAG estimates, six percent of Santee households in 2018 had incomes lower than $15,000, while 10 percent of households earned incomes between $15,000 and $29,999 (Table 7). This represents a proportional change in lower income categories since 2010. Approximately 23 percent of City households earned incomes between $30,000 and $60,000, while roughly 29 percent had incomes between $60,000 and $99,999. Another 32 percent of Santee households earned $100,000 or more. Proportionally, more households in Santee earn incomes higher than $75,000 when compared to countywide households (49 percent in Santee compared to 45 percent in the region). SANDAG estimated that the median household income in Santee was $84,226 as of January 2018, while the median income for the County was estimated to be $77,217 (Figure 5).

Table 7: Household Income Distribution, Santee and San Diego County (2010 and 2018)						
Household Income	2010		2018		Change in Proportion	
	Santee	County	Santee	County	Santee	County
Less than $15,000	7.0%	11.0%	6.0%	9.0%	-1.0%	-2.0%
$15,000 - $29,999	12.0%	14.0%	10.0%	12.0%	-2.0%	-2.0%
$30,000 - $44,999	13.0%	14.0%	11.0%	12.0%	-2.0%	-2.0%
$45,000 - $59,999	12.0%	11.0%	12.0%	11.0%	0.0%	0.0%
$60,000 - $74,999	13.0%	10.0%	12.0%	10.0%	-1.0%	.0%
$75,000 - $99,999	16.0%	13.0%	17.0%	13.0%	1.0%	0.0%
$100,000 or more	27.0%	27.0%	32.0%	32.0%	5.0%	-5.0%
TOTAL	100.0%	100.0%	100.0%	99.0%	0.0%	-1.0%
Notes: SANDAG Estimates do not add up to 100 percent. SANDAG presents household distributions to the nearest whole number. Source: SANDAG, Current Estimates, 2010, 2018. (Accessed 09/2020)						

Figure 5: Median Household Income (2018)

Note: Not adjusted for inflation. Source: SANDAG, Current Estimates, 2018. (Accessed 08/2020).

4. OVERCROWDING

An overcrowded housing unit is defined as a unit occupied by more than one person per room.[1] Overcrowding can result when there are not enough adequately sized units within a community, when high housing costs relative to income force too many individuals to share a housing unit than it can adequately accommodate, and/or when families reside in smaller units than they need to devote income to other necessities, such as food and health care.

According to the 2014-2018 ACS, roughly 3.4% of Santee households experienced overcrowded living conditions in 2018 (Table 8). Of these, 39 percent were in owner-occupied households, and 61

[1] Based on the Census Bureau's definition of "room," which excludes bathrooms, porches, balconies, foyers, halls, or half-rooms.

percent were renters. This suggests that renters are disproportionately affected by overcrowding – as of 2018, only 29 percent of the households in Santee were renter-occupied, but they represent 61 percent of all overcrowded households.

Table 8: Overcrowding[1] (2018)			
	Overcrowded	**% of Overcrowded HH**	**% of All Households[2]**
Owner	257	38.6%	1.9%
Renter	408	61.4%	7.1%
Total Households	665	100.0%	3.4%
Note: 1. Overcrowding: 1.01 or more persons per bedroom. 2. Percent of households for that category. Total owner households= 13,871; total renter households= 5,779; total households = 19,650. Source: American Community Survey, 2014-2018 Estimates.			

This pattern often suggests an inadequate supply of larger rental units. While 66 percent of occupied housing units in the City had three or more bedrooms (the minimum size considered large enough to avoid most overcrowding issues for large households), only 18 percent of these units were occupied by renters.

5. COST BURDEN

State and federal standards for housing cost burden are based on an income-to-housing cost ratio of 30 percent and above. Households paying more than 30 percent of their income on housing have limited remaining income for other necessities. Upper income households generally are capable of paying a larger proportion of income for housing; therefore, estimates of housing cost burden generally focus on lower and moderate income households.

According to the most recent Comprehensive Housing Affordability Strategy (CHAS) data, published by HUD, 36 percent of Santee households overpaid for housing in 2017 and housing cost burden affected a larger proportion of renters (48 percent) than owners (31 percent) (Table 9). While cost burden affected a smaller proportion of households in 2017 than 2010 (when 44 percent of households overpaid for housing), the trends in cost burden based on tenure have reversed. Since 2010, the proportion of cost burdened renter-households has increased from 43 to 48 percent. By contrast, the proportion of cost burdened owner-households decreased from 45 percent to 30 percent in seven years.

Cost burden affected a majority of lower and moderate income households in 2017 regardless of tenure; however, the incidence of cost burden was greatest among very low income homeowners (81 percent) and very low income renters (91 percent) (Figure 6). With a high prevalence of cost burden amongst lower income households, households may attempt to mitigate cost burden by taking in additional roommates or occupying smaller and presumably cheaper units, leading to overcrowding.

Table 9: Cost Burden by Tenure and Income Level (2010 and 2017)						
Income	**Owners**		**Renters**		**Renters and Owners**	
	2010	**2017**	**2010**	**2017**	**2010**	**2017**
Extremely Low Income (<= 30% AMI)	83.7%	75.7%	75.8%	77.9%	79.9%	76.9%
Very Low Income (30-50% AMI)	72.4%	59.4%	80.6%	90.5%	75.9%	74.9%
Low Income (50-80% AMI)	55.5%	50.9%	50.9%	67.8%	53.9%	57.5%
Moderate/Above Moderate Income (>80% AMI)	35.8%	19.5%	16.8%	15.7%	44.1%	18.6%
All Households	44.6%	30.5%	42.7%	48.3%	44.1%	36.0%
Source: Comprehensive Housing Affordability Strategy (CHAS), 2006-2010 estimates and 2013-2017 estimates.						

Figure 6: Cost Burden by Tenure and Income Category (2017)

Source: HUD Comprehensive Housing Affordability Strategy (CHAS) tabulations of 2013-2017 ACS data.

D. Special Needs Populations

Certain segments of the population may have more difficulty in finding decent, affordable housing due to their special needs. Special circumstances may be related to one's employment and income, family characteristics, disability, or household characteristics, among other factors. Consequently, certain residents in Santee may experience a higher prevalence of housing overpayment (cost burden), overcrowding, or other housing problems.

"Special needs" groups include the following: senior households, single-parent households, large households, persons with disabilities, agricultural workers, students, and homeless (Table 10). This section provides a detailed discussion of the housing needs facing each particular group as well as programs and services available to address their housing needs.

Table 10: Special Needs Groups

Special Needs Group	Santee		San Diego County	
	#	%	#	%
Senior-Headed Households (65+)	4,826	24.6%	249,767	22.3%
Single-Parent Households	1,634	8.3%	124,701	11.1%
Large Households	1,843	9.4%	132,588	11.8%
Persons with Disabilities	5,964	10.8%	314,897	9.8%
Agricultural Workers[1]	13	0.0%	13,471	0.9%
Students[2]	4,019	7.0%	296,600	9.0%
Homeless	25	0.0%	7,619	0.2%

1. Category includes civilians employed in the "agriculture, forestry, fishing and hunting, and mining" industry as reported in the ACS.
2. Population enrolled in college or graduate school
Source: Census, ACS, 2014-2018; and Regional Task Force on the Homeless, 2020.

1. SENIOR HEADED HOUSEHOLDS

Many senior-headed households have special needs due to their relatively low incomes, disabilities or limitations, and dependency needs. The population over 65 years of age is considered senior and has four main concerns: limited and often fixed income; poor health and associated high health care costs; mobility limitation and transit dependency; and high costs of housing.

From 2014 to 2018, seniors (age 65+) comprised 14 percent of Santee residents and 25 percent of households were headed by seniors. Of these households, the majority (84 percent) owned their homes, while the remainder (16 percent) rented. Aside from cost burden problems faced by seniors due to their relatively fixed incomes, many seniors are faced with various disabilities. Roughly, 34 percent of Santee's senior population was reported as having one or more disabilities between 2014 and 2018 by the ACS. The need for senior housing can be expected to increase in Santee due to the changing demographics of the population. It will therefore be particularly important for the City to encourage and facilitate the development of housing that is affordable to seniors.

2. SINGLE-PARENT HOUSEHOLDS

Single-parent households require special consideration and assistance because of their greater need for day care, health care, and other facilities. Female-headed households with children in particular tend to have lower incomes, thus limiting housing availability for this group.

According to the 2014-2018 ACS, approximately eight percent of Santee households were headed by single parents. The large majority of these, 66 percent, were headed by females. According to the 2014-2018 ACS, 21 percent of single-parent households had incomes below the poverty level; 87 percent of those households were headed by women. City efforts to expand affordable housing opportunities will help meet the needs of single-parent households

3. LARGE HOUSEHOLDS

Large households (with five or more members) are identified as a group with special housing needs based on the limited availability of adequately sized, affordable housing units. Large households are often of lower income, frequently resulting in the overcrowding of smaller dwelling units and in turn, accelerating unit deterioration.

About nine percent of Santee households were classified as "large households" by the 2014-2018 ACS. About 37 percent of those households rented the units they occupied. The housing needs of larger households are typically met through larger units. While 25 percent of occupied housing units in the City had four or more bedrooms, only a small portion of these units (13 percent) were occupied by renters. Since only nine percent of Santee's households are large households, Santee's housing stock should be adequate to meet the needs of larger households. However, lower income large renter households may have greater difficulty securing adequately-sized units than other large renter households.

4. PERSONS WITH DISABILITIES

Disability is a physical, mental, or developmental condition that substantially limits one or more major life activity. Disabilities can hinder access to housing units of conventional design, as well as limit the ability to earn adequate income. The 2014-2018 ACS estimated that 11 percent of Santee's population over five years of age had a disability. The ACS also tallied the number of disabilities by type for residents with one or more disabilities; a person may have more than one disability. Among the disabilities tallied, 32 percent involved difficulty hearing, 20 reported cognitive difficulty, 55 percent were ambulatory disabilities, 38 percent made independent living difficult, 16 percent limited self-care ability, and 20 percent involved visual difficulty.

Four factors – affordability, design, location and discrimination – significantly limit the supply of housing available to households of persons with disabilities. The most obvious housing need for persons with disabilities is housing that is adapted to their needs. Most single-family homes are inaccessible to people with mobility and sensory limitations. Housing may not be adaptable to widened doorways and hallways, access ramps, larger bathrooms, lowered countertops and other features necessary for accessibility. The cost of retrofitting a home often prohibits homeownership, even for individuals or families who could otherwise afford a home. Furthermore, some providers

of basic homebuying services do not have offices or materials that are accessible to people with mobility, visual or hearing impairments.

Location of housing is also an important factor for many persons with disabilities, as they often rely upon public transportation. Furthermore, the 2020 San Diego Regional Analysis of Impediments to Fair Housing Choice concluded housing choices for special needs groups were limited and thus an impediment to fair housing in the San Diego region.[2]

Services for persons with disabilities are typically provided by both public and private agencies. State and federal legislation regulate the accessibility and adaptability of new or rehabilitated multifamily apartment complexes to ensure accommodation for individuals with limited physical mobility. Furthermore, the City updated the Zoning Ordinance in January 2013 to establish a ministerial reasonable accommodation process and to accommodate supportive housing in all residential zones.

Persons with Developmental Disabilities

A recent change in State law requires that the Housing Element discuss the housing needs of persons with developmental disabilities. As defined by State law, "developmental disability" means a disability that originates before an individual attains 18 years of age, continues, or can be expected to continue, indefinitely, and constitutes a substantial disability for that individual. Intellectual disability, cerebral palsy, epilepsy, and autism, are considered developmental disabilities. The term also includes disabling conditions found to be closely related to intellectual disability or to require treatment similar to that required for individuals with an intellectual disability, but does not include other handicapping conditions that are solely physical in nature.

The Census does not collect or report statistics for developmental disabilities and no other source is known to have this data for Santee. According to the State's Department of Developmental Services, as of June 2019, approximately 562 Santee residents with developmental disabilities were being assisted at the San Diego Regional Center. Most of these individuals (75 percent) were residing in a private home with their parent or guardian and 271 of these persons with developmental disabilities were under the age of 18.

Many developmentally disabled persons can live and work independently within a conventional housing environment. More severely disabled individuals require a group living environment where supervision is provided. The most severely affected individuals may require an institutional environment where medical attention and physical therapy are provided. Because developmental disabilities exist before adulthood, the first issue in supportive housing for the developmentally disabled is the transition from the person's living situation as a child to an appropriate level of independence as an adult.

[2] San Diego Regional Alliance for Fair Housing, *San Diego Regional Analysis of Impediments to Fair Housing Choice,* May 2020.

5. AGRICULTURAL WORKERS

Agricultural workers are traditionally defined as persons whose primary incomes are earned through permanent or seasonal agricultural labor. Permanent farm laborers work in the fields, processing plants, or support activities on a generally year-round basis. When workload increases during harvest periods, the labor force is supplemented by seasonal labor, often supplied by a labor contractor. For some crops, farms may employ migrant workers, defined as those whose travel distance to work prevents them from returning to their primary residence every evening. Determining the true size of the agricultural labor force is difficult. For instance, the government agencies that track farm labor do not consistently define farm-workers (e.g. field laborers versus workers in processing plants), length of employment (e.g. permanent or seasonal), or place of work (e.g. the location of the business or field). Further limiting the ability to ascertain the number of agricultural workers within Santee is the limited data available on the City due to its relatively small size.

According to the 2014-2018 ACS, 13 residents of Santee residents were employed in farming, forestry, or fishing occupations. Santee is an urbanized community with no undeveloped parcels zoned for agriculture as a principal use; however, some residential zones allow a range of agriculture and related uses.

6. STUDENTS

Santee includes a private college within its jurisdictional limits (San Diego Christian College) and is in relatively close proximity to Grossmont Community College and San Diego State University. Approximately seven percent of Santee residents were enrolled in college between 2014-2018, which is slightly lower than the proportion of college students countywide (nine percent). San Diego State University is the largest university in the San Diego region, with approximately 34,000 students. The university provides housing for an estimated 19 percent of enrolled students. Typically, students have lower incomes and therefore can be impacted by a lack of affordable housing. Overcrowding within this special needs group is a common concern.

7. HOMELESS

According to HUD, the homeless population includes:

1) Individuals and families who lack a fixed, regular, and adequate nighttime residence and includes a subset for an individual who is exiting an institution where he or she resided for 90 days or less and who resided in an emergency shelter or a place not meant for human habitation immediately before entering that institution;

2) Individuals and families who will imminently lose their primary nighttime residence;

3) Unaccompanied youth and families with children and youth who are defined as homeless under other federal statutes who do not otherwise qualify as homeless under this definition; or

4) Individuals and families who are fleeing, or are attempting to flee, domestic violence, dating violence, sexual assault, stalking, or other dangerous or life-threatening conditions that relate to violence against the individual or a family member.

Assessing a region's homeless population is difficult because of the transient nature of the population. San Diego County's leading authority on the region's homeless population is the Regional Task Force on the Homeless (RTFH). Based on the 2020 Point-in-Time Count, the majority of the region's homeless population is estimated to be in the urban areas, but a sizeable number of homeless persons make their temporary residence in rural areas (Table 11). RTFH estimates that all of Santee's homeless population (25 people) was unsheltered in 2020.

Table 11: Homeless Population by Jurisdiction (2020)

Jurisdiction	Total Homeless				Total	Percent Unsheltered
	Unsheltered	Emergency Shelters	Safe Haven	Transitional Housing		
Lemon Grove	18	0	0	0	18	100.0%
El Cajon	310	162	0	312	784	39.5%
La Mesa	52	0	0	0	52	100.0%
San Diego	2,283	1,759	36	809	4,887	46.7%
Santee	**25**	**0**	**0**	**0**	**25**	**100.0%**
Lakeside	24	0	0	0	24	100.0%

Source: San Diego Regional Task Force on the Homeless, 2020.

Homelessness is a regional issue that requires the coordination among regional agencies. Santee is part of the San Diego County Continuum of Care Consortium that covers the unincorporated County and all incorporated cities with the exception of the City of San Diego.

The City's Supportive Services Program provides Community Development Block Grant (CDBG) funds to homeless service providers to meet the immediate needs of homeless or near homeless in Santee. Services include the provision of food, temporary shelter, health care, and other social services. The City's Zoning Ordinance was amended in January 2013 to update the requirements for emergency shelters and transitional housing pursuant to SB 2. The City has identified more than seven acres on eight parcels on Woodside Avenue within the General Industrial "IG" zoning designation where emergency shelters could be sited with ministerial permit approval. Transitional housing is allowed in all residential zones.

E. Housing Stock Characteristics

A community's housing stock is defined as the collection of all housing units located within the jurisdiction. The characteristics of the housing stock, including growth, type, age and condition, tenure, vacancy rates, costs, and affordability are important in determining the housing needs for the community. This section details the housing stock characteristics of Santee to identify how well the current housing stock meets the needs of current and future residents of the City.

1. Housing Unit Growth and Type

Santee has experienced steady housing growth since 2000, when the City had 18,833 units. During the past Housing Element planning period, the City's housing stock grew from 20,422 units in 2013 to an estimated 21,248 units as of January 2020, or approximately four percent (Table 12). The City's housing growth outpaced that of nearby East County neighbors El Cajon, La Mesa, and Lemon Grove since 2013.

Table 12: San Diego Regional Housing Stock (2013 and 2020)

Jurisdiction	# of Units January 2013	# of Units January: 2020	% Increase 2013-2020
El Cajon	35,898	36,282	1.1%
La Mesa	26,482	26,929	1.7%
Lemon Grove	8,873	9,139	3.0%
San Diego	519,181	549,070	5.8%
Santee	**20,422**	**21,248**	**4.0%**
San Diego County	1,174,866	1,226,879	4.4%

Source: Census 2000; and California Department of Finance, 2013, 2020.

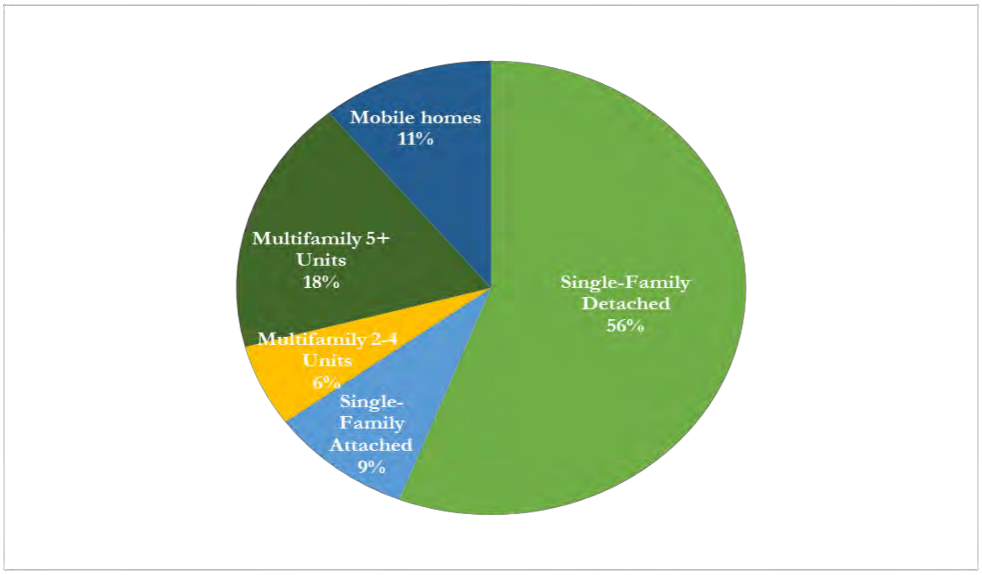
Santee maintains a diverse housing stock. In 2020, single-family homes comprised 65 percent of the housing stock, while multifamily units comprised 24 percent, and 11 percent of the housing stock consisted of mobile homes (Table 13). According to the 2020 California Department of Finance housing estimates, the City has a larger proportion of mobile homes in San Diego County.

Table 13: Housing Stock Composition (2020)

Housing Type	January 2020	
	# of Units	% of Total
Single-Family Detached	11,871	55.9%
Single-Family Attached	1,930	9.1%
Multifamily 2-4 Units	1,247	5.9%
Multifamily 5+ Units	3,864	18.2%
Mobile homes	2,336	11.0%
Total Units	21,248	100.0%

Source: California Department of Finance, 2020.

Figure 7: Housing Stock Composition (2020)



Source: California Department of Finance, 2020

2. HOUSING AGE AND CONDITION

Housing that is 30 years or older is assumed to require some rehabilitation. Such features as electrical capacity, kitchen features, and roofs, usually need updating if no prior replacement work has occurred. Santee's housing stock is older than the County's; 80 percent of the City's housing stock was constructed prior to 1990, while only 72 percent of the County's housing stock is more than 30 years old (Table 14).

Nearly 88 percent of the City's existing housing stock will exceed 30 years of age by the end of this Housing Element planning period (built before 2000). Continued maintenance will be essential to prevent widespread housing deterioration. The Code Enforcement Officer tracks and maintains statistics annually for housing units in need of rehabilitation or replacement.

Table 14: Age of Housing Stock				
	Santee		San Diego	
Less than 30 years old				
Post-2010	622	3.0%	35,306	2.9%
2000-2009	1,752	8.5%	145,104	12.0%
1990-1999	1,670	8.1%	151,967	12.6%
Total	**4,044**	**19.7%**	**332,377**	**27.6%**
30 to 50 years old				
1980-1989	3,958	19.3%	230,420	19.1%
1970-1979	7,194	35.1%	272,251	22.6%
Total	**11,152**	**54.4%**	**502,671**	**41.7%**
50 years or older				
1960-1969	3,203	15.6%	144,647	12.0%
1950-1959	1,533	7.5%	130,316	10.8%
1940-1949	316	1.5%	41,844	3.5%
Pre-1939	258	1.3%	53,029	4.4%
Total	**5,310**	**25.9%**	**369,836**	**30.7%**
All housing units	20,506	100.0%	1,204,884	100.0%

Note: The total number of units in ACS is based on extrapolations from a 5% sample. The total number housing units from the State Department of Finance is based on updating the 100% census with annual building permit activities.
Source: ACS, 2014-2018.

3. HOUSING TENURE

The tenure distribution of a community's housing stock (owner versus renter) influences several aspects of the local housing market. Residential stability is influenced by tenure, with ownership housing evidencing a much lower turnover rate than rental housing. Housing cost burden, while faced by many households, is far more prevalent among renters. Tenure preferences are primarily related to household income, composition, and age of the householder. Between 2014 and 2018, 71 percent of Santee residents owned the units they occupied, while 29 percent rented (Table 15). This rate of homeownership is the highest among all of neighboring communities and nearly 18 percentage points higher than the countywide rate.

Table 15: Housing Tenure (2018)		
Jurisdiction	**Percent Owner-Occupied**	**Percent Renter-Occupied**
El Cajon	39.3%	60.7%
La Mesa	41.2%	58.8%
Lemon Grove	53.8%	46.2%
San Diego	46.9%	53.1%
Santee	70.6%	29.4%
San Diego County	53.1%	46.9%

Source: Census, ACS, 2014-2018.

Both owner- and renter-occupied households in Santee had similar household size, as evidenced by the almost identical average household sizes (Table 16). Among those who owned their homes between 2014 and 2018, 41 percent lived in homes with three or more persons per household, compared to 44 percent for the renter-households.

Table 16: Tenure by Household Size (2018)		
Households	**% of Total Units Owner-Occupied**	**% of Total Units Renter-Occupied**
1-person	21.2%	20.6%
2-person	34.7%	30.1%
3-person	19.8%	23.1%
4-person	15.9%	14.4%
5+-person	5.6%	6.9%
Average household size	2.82	2.86
Source: Census, ACS, 2014-2018.		

4. HOUSING VACANCY

A certain number of vacant units are needed to moderate the cost of housing, allow sufficient choice for residents, and provide an incentive for unit upkeep and repair. Specifically, vacancy rates of 1.5 to 2.0 percent for ownership housing and 5.0 to 6.0 percent for rental housing are considered optimal to balance demand and supply for housing.

Vacancy rates in Santee are lower than what is considered optimal for a healthy housing market. According to the 2014-2018 ACS, the overall vacancy rate in Santee was 4.2 percent. Specifically, the vacancy rate for ownership housing was one percent, while the overall rental vacancy rate was 2.9 percent. Too low of a vacancy rate can force prices up, making it more difficult for low and moderate income households to find housing and increasing the incidence of overcrowding.

5. HOUSING COSTS AND AFFORDABILITY

The cost of housing is directly related to the extent of housing problems in a community. If housing costs are relatively high in comparison to household income, there will be a correspondingly higher prevalence of housing cost burden and overcrowding. This section summarizes the cost and affordability of the housing stock to Santee residents.

Homeownership Market

Median home sales prices in the surrounding areas of Santee ranged from $482,500 in Lemon Grove to $631,500 in the City of San Diego in 2020 (Table 17). Santee's median home price is on the lower end of the spectrum at $535,000. However, median home sale prices increased the most in Santee, increasing by almost 50 percent between 2015 and 2020. All other surrounding cities also saw increases in their median home prices during this period but only ranging between 27 percent increase in La Mesa and 42 percent in Chula Vista.

Table 17: Median Home Sales Prices (2015 and 2020)			
Jurisdiction	**March 2015**	**March 2020**	**% Change 2015-2020**
Chula Vista	$400,000	$566,000	41.5%
El Cajon	$390,000	$540,500	38.6%
La Mesa	$440,000	$557,000	26.6%
Lemon Grove	$352,500	$482,500	36.9%
San Diego	$486,000	$631,500	29.9%
Santee	**$365,000**	**$535,000**	**46.6%**
San Diego County	$455,000	$590,000	29.7%
Source: Corelogic, Home Sales Activity by City, March 2015 and March 2020.			

The Zillow online database was also consulted in an effort to better understand the more current home sale market in Santee. Zillow listed 37 single-family homes and 21 condos/townhouses for sale in August 2020 (Table 18). The median asking price for a unit was $551,334, with a range of $117,000 to $1,355,000. Single-family homes were priced higher ($600,714 median) than condos/townhouses ($450,000 median).

Table 18: Home Asking Prices (August 2020)			
Unit Type	**Number for Sale**	**Asking Price Range**	**Median Asking Price**
Single-Family Homes	**37**	**$117,000-$1,355,000**	**$600,714**
2-Bedroom	4	$117,000-$149,900	$124,900
3-Bedroom	20	$445,912-$975,000	$596,947
4+-Bedroom	13	$552,668- $1,355,000	$667,956
Condos/Townhomes	**21**	**$360,000- $599,000**	**$450,000**
2-Bedroom	3	$360-000-$450,000	$369,000
3-Bedroom	17	$389,800-$599,000	$459,000
4+-Bedroom	1	$525,000	$525,000
All Homes	**58**	**$117,000-$1,355,000**	**$551,334**
Source: Zillow, August 26, 2020.			

The home sale market continues to rise in Santee, as the median asking price of homes in August 2020 ($551,334) is significantly higher than the median sale price of homes in November 2012 ($275,000) as reported in the 2013-2021 Housing Element based on the online Multiple Listing Service (MLS) database.

Rental Market

With renters comprising approximately 30 percent of the City's households, it is important to understand the rental market in Santee. Internet resources were consulted to understand the rental housing market in Santee (Table 19). Rental price information was collected for five apartment complexes within the City with units for rent advertised on Zillow.com in September 2020. At the time of the research, there were no studio apartment units available, while one-bedroom units rented

for $1,495+ to $1,891. Larger units were more expensive; two-bedroom units were offered at rents ranging from $1,925 to $2,300, while a three-bedroom unit was listed at $2,750.

Table 19: Apartment Rental Rates (September 2020)

Apartment Complex	Rental Price Range
Oaks Apartments	
1 BR	$1,565-$1655
2 BR	$1,925-$1,955
Santee Villas	
1 BR	$1,720-$1,755
2 BR	$1,940-$1,975
Parc One	
1 BR	$1,880-$1891
2 BR	$2,300
3 BR	$2,750
Carlton Heights Villas	
1 BR	$1,500-$1,632
2 BR	$1,990
Town Center Apartments	
1 BR	$1,495+
Source: Zillow.com, September 2020.	

The San Diego County Apartment Association publishes quarterly rental market reports based on surveys conducted throughout the region. Fall average rents increased for units of all sizes in Santee between 2011 and 2019. The average price of three-bedroom units doubled during this period (up by 105.1 percent); while rental rates for one-bedroom and two-bedroom units increased significantly (69 and 63 percent, respectively) in Santee (Table 20). In general, average rents for units in Santee were slightly lower than average rents of similar units in neighboring jurisdictions (Table 20).

Table 20: Average Rental Rates by Jurisdiction Fall 2011 and Fall 2019				
Jurisdiction	**# of Rooms**	**Fall 2011 Average rents**	**Fall 2019 Average Rents**	**% Change Fall 2011 to Fall 2019**
El Cajon	Studio	$729	$1,000	37.2%
	1 BR	$857	$1,863	117.4%
	2 Br	$1,095	$1,941	77.3%
	3BR	$1,394	$2,270	62.8%
La Mesa	Studio	$872	-	-
	1 BR	$1,097	$1,798	63.9%
	2 Br	$1,437	$2,271	58.0%
	3BR	$1,739	$2,597	49.3%
San Diego	Studio	$923	$1,526	65.3%
	1 BR	$1,211	$1,881	55.3%
	2 Br	$1,575	$2,241	42.3%
	3BR	$1,877	$2,460	31.1%
Santee	**Studio**	**--**	**-**	**-**
	1 BR	**$988**	**$1,672**	**69.2%**
	2 Br	**$1,205**	**$1,963**	**62.9%**
	3BR	**$1,153**	**$2,365**	**105.1%**
San Diego County	Studio	$899	$1,342	49.3%
	1 BR	$1,090	$1,666	52.8%
	2 Br	$1,418	$2,013	42.0%
	3BR	$1,730	$2,483	43.5%
Source: San Diego County Apartment Association, Fall 2011 and Fall 2019.				

Housing Affordability by Household Income

Housing affordability is dependent upon income and housing costs. Using set income guidelines, current housing affordability can be estimated. According to the HCD income guidelines for 2020, the Area Median Income (AMI) in San Diego County was $92,700 (adjusted for household size). Assuming that the potential homebuyer has sufficient credit and down payment (10 percent) and spends no greater than 30 percent of their income on housing expenses (i.e. mortgage, taxes and insurance), the maximum affordable home price and rental price can be determined. The maximum affordable home and rental prices for residents of San Diego County are shown in Table 21. Households in the lower end of each category can afford less by comparison than those at the upper end. The market-affordability of Santee's housing stock for each income group is discussed below:

Extremely Low Income Households: Extremely low income households earn 30 percent or less of the AMI. The estimated maximum affordable rental payment ranges from $444 per month for a one-person household to $589 per month for a family of five (Table 21). The maximum affordable home purchase price for extremely low income households ranges from $60,846 for a one-person household to $68,801 for a five-person household. Extremely low income households generally cannot afford housing at market rate.

Very Low Income Households: Very low income households are classified as those earning 50 percent or less of the AMI. The estimated maximum affordable rental payment ranges from $847 per month for a one-person household to $1,213 per month for a family of five (Table 21). The maximum affordable home purchase price for very low income households ranges from $130,009 for a one-person household to $175,652 for a five person household. Based on the rental data presented in Table 19 and Table 20, very low income households of all sizes would be unlikely to secure adequately sized and affordable rental housing in Santee.

Low Income Households: Low income households earn 51 to 80 percent of the County AMI. The estimated maximum home price a low income household can afford ranges from $233,862 for a one-person household to $335,821 for a five-person family. Affordable rental rates for low income households would range from $1,454 for a one-person household to $2,148 for a five-person household.

As indicated by the data presented in Table 18, low income households could not afford adequately sized homes listed for-sale in August 2020. Low income households do not have better chance in securing an adequately sized and affordable rental housing unit as rental units range from $1,495-1,755 for one-bedroom units to $2,750 for three-bedroom units and are out of the affordable rent price (Table 19Table 20). Also, limited number of apartment complexes offering three-bedroom units in Santee at prices affordable to larger low-income households is indicative of the potential difficulty these households face.

Moderate Income Households: Moderate income households earn up to 120 percent of the County AMI. The estimated maximum affordable home price for moderate income households ranges from $290,392 for a one-person household to $422,971 for a family of five. A moderate income household can afford rental rates of $1,784 to $2,656 per month depending on household size.

Based on the rental and for-sale housing market data presented in Table 19 and Table 18, moderate income households can afford to rent some of the apartments advertised in September 2020 but not purchase adequately sized homes. For example, asking prices for a four-bedroom home (an adequately sized home to avoid overcrowding) range from $525,000 to $1.3 million (Table 18). This far exceeds the affordable purchase price for large households. Table 18 does include some single-family home and condo/townhome listings that meet the affordable price for large families, but they are two-bedroom units.

Table 21: Housing Affordability Matrix San Diego County (2020)								
Annual Income		Affordable Housing Cost		Utilities, Taxes and Insurance			Affordable Price	
		Rent	Own	Rent	Own	Taxes/ Insurance/ HOA	Rent	Purchase
Extremely Low Income (30% of AMI)								
One Person	$24,300	$608	$608	$164	$164	$213	$444	$60,846
Small Family	$31,200	$780	$780	$240	$240	$273	$541	$70,498
Large Family	$37,450	$936	$936	$348	$348	$328	$589	$68,801
Very Low Income (50% of AMI)								
One Person	$40,450	$1,011	$1,011	$164	$164	$354	$847	$130,009
Small Family	$52,000	$1,300	$1,300	$240	$240	$455	$1,061	$159,576
Large Family	$62,400	$1,560	$1,560	$348	$348	$546	$1,213	$175,652
Low Income (80% of AMI)								
One Person	$64,700	$1,618	$1,618	$164	$164	$566	$1,454	$233,862
Small Family	$83,200	$2,080	$2,080	$240	$240	$728	$1,841	$293,192
Large Family	$99,800	$2,495	$2,495	$348	$348	$873	$2,148	$335,821
Moderate Income (120% of AMI)								
One Person	$77,900	$1,948	$1,948	$164	$164	$682	$1,784	$290,392
Small Family	$100,150	$2,504	$2,504	$240	$240	$876	$2,264	$365,782
Large Family	$120,150	$3,004	$3,004	$348	$348	$1,051	$2,656	$422,971

1. Small family =3-person household
2. Large family= 5-person household.

Source: California Department of Housing and Community Development, 2020 Income limits; and Veronica Tam and Associates.

Assumptions: 2020 HCD income limits; 30% gross household income as affordable housing cost; 35% of monthly affordable cost for taxes and insurance; 10.0% down payment; and 3.0% interest rate for a 30-year fixed-rate mortgage loan. Utilities based on the Housing Authority of the County of San Diego Utility Allowance, 2019 . Utility allowances based on the combined average assuming all electric and all natural gas appliances.

F. Project-Based Rental Housing Assistance

1. ASSISTED HOUSING INVENTORY

Existing housing that receives governmental assistance is often a significant source of affordable housing in many communities. Santee has six assisted housing developments that provide 612 affordable housing units (Table 22).

Table 22: Inventory of Assisted Rental Housing

Project Name	Total Units	Assisted Units	Funding Source	Earliest Date of Conversion	# Units At Risk
Cedar Creek Apartments	48	47	LIHTC	Year 2025	47
			Revenue Bond	Year 2025	
			Redevelopment Set-Aside	Year 2065	
Forester Square Apartments	44	43	LIHTC	Year 2025	43
			Revenue Bond	Year 2025	
			Redevelopment Set-Aside	Year 2068	
Laurel Park Senior Apartments	133	132	CDLAC Bond	Year 2031	132
Woodglen Vista Apartments	188	188	HFDA/Section 8	12/31/2035	0
Carlton Country Club Villas	130	121	Section 236	---	0
			Section 8	4/30/2038	
Shadow Hill Apartments	81	81	CDLAC Bond	Year 2056	0
Total Assisted Units	624	612			222

Source: City of Santee, 2020; and the HUD Multifamily Assistance and Section 8 Contracts Database, as of 8/24/2020.

2. AT-RISK HOUSING

State law requires that the City identify, analyze, and propose programs to preserve existing affordable multifamily rental units that are eligible to convert to market rate uses due to termination of subsidy contract, mortgage prepayment, or expiring use restrictions during a 10-year period starting April 15, 2021. Consistent with State law, this section identifies publicly assisted housing units in Santee and analyzes their potential to convert to market rate housing uses.

During the 2021-2031 "at-risk" housing analysis period, three assisted housing projects in Santee are at risk of converting to market-rate housing. As of April 15, 2021, 222 units were at risk of converting to market rate rents. Of these units, 47 are within the Cedar Creek Apartments, 43 within the Forester Square Apartments, and 132 in the Laurel Park Senior Apartments. The City will continue to monitor these at-risk units and should a notice of intent to convert to market rate be filed, work with potential purchasers to preserve the units, and ensure that tenants were properly notified of their rights under California law.

3. PRESERVATION OPTIONS

Preservation of the at-risk units can be achieved in several ways: 1) facilitate transfer of ownership of these projects to or purchase of similar units by nonprofit organizations; 2) purchase of affordability covenant; and 3) provide rental assistance to tenants using funding sources other than Section 8.

Transfer of Ownership

Long-term affordability of lower income units can be secured by transferring ownership of these projects to non-profit housing organizations. By doing so, these units would be eligible for a greater range of government assistance. Table 23 presents the estimated market value for the 222 units at Cedar Creek, Forester Square, and Laurel Park to establish an order of magnitude for assessing preservation costs. As shown, the total market value of these units is approximately $48,075,000. Assuming a five-percent down payment is made on each project, at least $2,400,000 down payment cost would be required to transfer ownership of these buildings to non-profit organizations. Unless some form of mortgage assistance is available to interested nonprofit organizations, rental income alone from the lower income tenants would not likely be adequate to cover the mortgage payment, and rental subsidy would be required.

Table 23: Market Value of At-Risk Housing Units

Project Units	Cedar Creek Apartments	Forester Square Apartments	Laurel Park
1 BR	5	17	104
2 BR	18	12	28
3 BR	24	14	0
Total	47	43	132
Annual Operating Cost	$280,035	$233,730	$612,990
Gross Annual Income	$1,205,448	$1,021,080	$2,746,224
Net Annual Income	$925,413	$787,350	$2,133,234
Market Value	$11,567,663	$9,841,875	$26,665,425

Market value for each project is estimated with the following assumptions:

1. Average market rent for 1-BR is $1,672, 2-BR is $1,963, and $2,365 for a 3-BR (**Table 20**).
2. Average bedroom size for 1-BR assumed at 600 square feet, 750 square feet for 2-BR, and 900 square feet for a 3-BR.
3. Annual operating expenses per square foot = $7.35 (based on NAI San Diego's Multifamily Market Report Q3, 2019. Figure represents average operating costs for three- and two-star buildings).
4. Market value = Annual net project income*multiplication factor
5. Multiplication factor for a building in good condition is 12.5.

Purchase of Affordability Covenant

Another option to preserve the affordability of at-risk projects is to provide an incentive package to the owners to maintain the projects as lower income housing. Incentives could include writing down the interest rate on the remaining loan balance, and/or supplementing the subsidy amount received to market levels.

Rent Subsidy

Tenant-based rent subsidies could be used to preserve the affordability of housing. Similar to Housing Choice Vouchers, the City through a variety of potential funding sources could provide a voucher to

very low income households. The level of the subsidy required to preserve the at-risk affordable housing is estimated to equal the Fair Market Rent for a unit minus the housing cost affordable by a very low income household. Table 24 estimates the rent subsidies required to preserve the housing affordability for the residents of the 222 at-risk units. Based on the estimates and assumptions shown in this table, approximately $2,533,000 in rent subsidies would be required annually.

Table 24: Rent Subsidies Required

Project Units	Cedar Creek Apartments	Forester Square Apartments	Laurel Park
1 BR	5	17	104
2 BR	18	12	28
3 BR	24	14	
Total	47	43	132
Total Monthly Rent Income Supported by Affordable Housing Cost of Very Low Income Households	$52,445	$44,113	$117,796
Total Monthly Rent Allowed by Fair Market Rents	$113,952	$91,582	$219,900
Total Annual Subsidies Required	$738,084	$569,628	$1,225,248
Average Annual Subsidy per Unit	$15,704	$13,247	$9,282
Average Monthly Subsidy per Unit	$1,309	$1,104	$774

Average subsidy per unit for each project is estimated with the following assumptions:

1. A 1-BR unit is assumed to be occupied by a 1-person household, a 2-BR unit by a 3-person household, and a 3-BR unit by a 5-person household.
2. Based on 2020 Area Median Income in San Diego County, affordable monthly housing cost for a 1-person very low income household is $847, $1,061 for a 3-person household, and $1,213 for a 5-person household (Table 21).
3. HUD 2020 Fair Market Rents in the San Diego MSA is $1,566 for a 1-BR, $2,037 for a 2-BR, and $2,894 for a 3-BR.

4. REPLACEMENT COSTS

The cost of developing new housing depends on a variety of factors such as density, size of units, location and related land costs, and type of construction. Assuming an average development cost of $300,000 per unit for multifamily rental housing, replacement of the 222 at-risk units would require approximately $66,600,000. This cost estimate includes land, construction, permits, on- and off-site improvements, and other costs.

5. COST COMPARISON

The cost to build new housing to replace the 222 at-risk units is high, with an estimated total cost of more than $66,600,000. This cost estimate is substantially higher than the cost associated with transfer of ownership ($48,075,000) and providing rent subsidies similar to Housing Choice Vouchers for 20 years ($50,6590,000).

G. Estimates of Housing Needs

The Comprehensive Housing Affordability Strategy (CHAS) developed by the Census for HUD provides detailed information on housing needs by income level for different types of households in Santee. Detailed CHAS data based on the 2013-2017 ACS is displayed in Table 25. Based on CHAS, housing problems in Santee include:

1) Units with physical defects (lacking complete kitchen or bathroom);
2) Overcrowded conditions (housing units with more than one person per room);
3) Housing cost burden, including utilities, exceeding 30 percent of gross income; or
4) Severe housing cost burden, including utilities, exceeding 50 percent of gross income.

Disproportionate Needs

The types of problems vary according to household income, type, and tenure. Some highlights include:

- Overall, housing problems affected roughly a greater proportion of renter-households (48 percent) than owner-households (31 percent).

- Elderly renters had the highest level of housing problems regardless of income level (64 percent).

- All extremely low income large renter families had housing problems; the CHAS estimates that all of these households paid more than 50 percent of their income on housing costs.

- More than a third (36 percent) of all lower income households (<80 percent AMI), regardless of tenure, incurred a cost burden.

- Of the 1,615 extremely low income Santee households reported in the 2013-2017 CHAS, approximately 63 percent incurred a housing cost burden exceeding 50 percent of their monthly income.

Table 25: Housing Assistance Needs of Low and Moderate Income Households in Santee							
Household by Type, Income & Housing Problem	Renters				Owners		Total Households
	Elderly	Small Families	Large Families	Total Renters	Elderly	Total Owners	
Extremely Low Income (0-30% AMI)	240	290	65	855	500	760	1,615
% with any housing problem	83.3%	87.9%	46.2%	78.9%	80.0%	75.0%	77.1%
% with cost burden >30%	83.3%	87.9%	46.2%	78.9%	80.0%	75.0%	77.1%
% with cost burden > 50%	58.3%	77.6%	46.2%	63.7%	64.0%	62.5%	63.2%
Very Low Income (31-50% AMI)	225	440	75	955	665	960	1,915
% with any housing problem	91.1%	90.9%	100.0%	89.5%	54.9%	60.4%	74.9%
% with cost burden >30%	91.1%	90.9%	100.0%	89.5%	54.9%	59.9%	74.7%
% with cost burden >50%	68.9%	43.2%	100.0%	57.1%	30.1%	37.5%	47.3%
Low Income (51-80% AMI)	170	770	195	1,375	970	2,140	3,515
% with any housing problem	52.9%	71.4%	82.1%	69.5%	30.4%	52.1%	58.9%
% with cost burden >30%	52.9%	71.4%	71.8%	68.0%	29.4%	51.1%	57.7%
% with cost burden > 50%	8.8%	11.7%	5.1%	12.0%	13.4%	20.7%	17.3%
Total Households	875	3,255	605	6,025	4,085	13,445	19,470
% with any housing problem	68.0%	48.5%	58.7%	51.5%	35.5%	32.0%	38.1%
Source: HUD CHAS tabulations of 2013-2017 ACS data.							

Section 3: Housing Constraints

Various nongovernmental factors, governmental regulations, and environmental issues pose constraints to the provision of adequate and affordable housing. These constraints may result in housing that is not affordable to lower and moderate income households or may render residential construction market prices economically infeasible for developers. This section addresses these potential constraints.

A. Nongovernmental Constraints

Locally and regionally there are several constraints that hinder the ability to accommodate Santee's affordable housing demand. The high cost of land, rising development costs, and neighborhood opposition make it expensive for developers to build housing.

1. Land and Development Costs

High development costs in the region stifle potential affordable housing developments. Development costs (land, entitlement, and construction) for residential units have increased rapidly over the last decade, especially for the cost of land when vacant developable land is diminishing. Furthermore, neighborhood resistance to some developments lengthens development time, driving up costs. The difficulty of assembling and developing infill sites can also add to costs.

Reduction in amenities and the quality of building materials (above a minimum acceptability for health, safety, and adequate performance) could lower costs and associated sales prices or rents. In addition, prefabricated factory-built housing may provide for lower priced housing by reducing construction and labor costs. Another factor related to construction costs is the number of units built at one time. As the number of units increases, overall costs generally decrease due to economies of scale.

The price of land and any necessary improvements or demolition of existing structures is a key component of the total cost of housing. The lack of vacant land for residential construction, especially land available for higher density residential development, has served to keep the cost of land high. Based on listings at Zillow.com, land zoned for low density residential uses could capture about $800,000 per acre (or an average of $100,000 per unit). Land at the urban core that might be used for high density residential uses is priced around $1.75 million per acre.

2. Labor Shortage Construction Costs

Another key component of construction cost is labor. California is 200,000 construction workers short to meet Governor Newsom's housing goals. This number comes from a study for Smart Cities Prevail. The study finds that California lost about 200,000 construction workers since 2006. Many lost their jobs during the recession and found work in other industries. University of Southern California housing economist Gary Painter also says that California has "a shortage of construction workers at the price people want to pay." However, the dilemma is that higher pay for construction workers would increase the overall construction costs for housing. In some cases, developers are "importing" workers from out of state for the construction work and pay for their temporary housing during the construction periods.

One indicator of construction costs is Building Valuation Data compiled by the International Code Council (ICC). The unit costs compiled by the ICC include structural, electrical, plumbing, and mechanical work, in addition to interior finish and normal site preparation. The data are national and do not take into account regional differences, nor include the price of the land upon which the building is built. In 2020, according to the latest Building Valuation Data release, the national average for development costs per square foot for apartments and single-family homes in 2020 are as follows:

- Type I or II, R-2 Residential Multifamily: $148.82 to $168.94 per sq. ft.
- Type V Wood Frame, R-2 Residential Multifamily: $113.38 to $118.57 per sq. ft.
- Type V Wood Frame, R-3 Residential One and Two Family Dwelling: $123.68 to $131.34 per sq. ft.
- R-4 Residential Care/Assisted Living Facilities generally range between $143.75 to $199.81 per sq. ft.

In general, construction costs can be lowered by increasing the number of units in a development, until the scale of the project requires a different construction type that commands a higher per square foot cost.

3. CONSTRUCTION FINANCING

The financing of a residential project, particularly affordable housing, is quite complex. Construction loans are almost never available for over 75 percent of the future project value for multifamily developments. This means that developers must usually supply at least 25 percent of the project value. Furthermore, no firm threshold determines what a lender considers to be an acceptable 'return' on investment, nor the maximum equity contribution at which an otherwise feasible project becomes infeasible. Upfront cash commitment may not be problematic for some developers as long as the project can generate an acceptable net cash flow to meet the acceptable returns. Although financing costs impact project feasibility, these problems are generally equal across jurisdictions and thus are not a unique constraint to housing production in Santee.

4. AVAILABILITY OF HOME FINANCING

Under the Home Mortgage Disclosure Act (HMDA), lending institutions are required to disclose information on the disposition of loan applications and the income, gender, and race of loan applicants.

Overall, 561 households applied for government-backed mortgage loans and 951 households applied for conventional home mortgage loans in Santee in 2017 (Table 26). However, approval rate was lower for conventional loans than for government-backed loans, and lower in 2017 than in 2012. Refinancing loan applications were the most frequent type of mortgage loans with an approval rate of 62 percent, lower than the approval rate in 2012. Home improvement loans have the lowest approval rates among other types of financing.

Table 26: Disposition of Home Loans: 2017								
Jurisdiction	Total Applicants		Percent Approved		Percent Denied		Percent Other[1]	
	2012	2017	2012	2017	2012	2017	2012	2017
Government Backed Purchase	536	561	78.4%	80.6%	11.2%	6.2%	10.4%	13.2%
Conventional Purchase	436	951	78.2%	73.9%	9.9%	9.3%	11.9%	16.8%
Refinance	4,034	2,323	70.4%	61.5%	15.0%	16.1%	14.6%	22.4%
Home Improvement	121	306	60.3%	61.8%	30.6%	26.8%	9.1%	11.4%
Total	**5,127**	**4,141**	**71.7%**	**67.0%**	**14.6%**	**14.0%**	**13.8%**	**19.1%**
Source: www.lendingpatterns.com, 2020								

5. AFFIRMATIVELY FURTHERING FAIR HOUSING

AB 686 passed in 2017 requires the inclusion in the Housing Element an analysis of barriers that restrict access to opportunity and a commitment to specific meaningful actions to affirmatively further fair housing. The bill states that if the public agency completes or revises an assessment of fair housing, the public agency may incorporate relevant portions of that assessment of fair housing into the Housing Element. In 2019-2020, the City of Santee collaborated with all other jurisdictions in San Diego County to prepare a Regional Analysis of Impediments (AI) to Fair Housing Choice, which was completed in July 2020. This section summarizes the some of the key findings of the study.

Fair Housing Trends and Services

The City of Santee contracts with CSA San Diego County to provide fair housing services. Between 2014 and 2018, 276 persons in Santee were served. In FY 2020, Santee conducted testing for housing discrimination based on national origin and race at two sites. The site tested for race showed differential treatment. Between 2014 and 2018, HUD received nine cases of fair housing complaints from Santee residents, with two-thirds of these cases involving discrimination based on disability. However, four of these complaints were determined to be not well-founded.

Access to Opportunities

While the Federal Affirmatively Furthering Fair Housing (AFFH) Rule has been repealed, the data and mapping developed by HUD for the purpose of preparing the Assessment of Fair Housing (AFH) can still be useful in informing communities about segregation in their jurisdiction and region, as well as disparities in access to opportunity. This section presents the HUD-developed index scores based on nationally available data sources to assess Santee residents' access to key opportunity assets. Table 27 provides index scores or values (the values range from 0 to 100) for the following opportunity indicator indices:

- **Low Poverty Index:** The low poverty index captures poverty in a given neighborhood. The poverty rate is determined at the census tract level. *The higher the score, the less exposure to poverty in a neighborhood.*

- **School Proficiency Index:** The school proficiency index uses school-level data on the performance of 4th grade students on state exams to describe which neighborhoods have

high-performing elementary schools nearby and which are near lower performing elementary schools. *The higher the score, the higher the school system quality is in a neighborhood.*

- **Labor Market Engagement Index:** The labor market engagement index provides a summary description of the relative intensity of labor market engagement and human capital in a neighborhood. This is based upon the level of employment, labor force participation, and educational attainment in a census tract. *The higher the score, the higher the labor force participation and human capital in a neighborhood.*

- **Transit Trips Index:** This index is based on estimates of transit trips taken by a family that meets the following description: a 3-person single-parent family with income at 50 percent of the median income for renters for the region (i.e. the Core-Based Statistical Area (CBSA)). *The higher the transit trips index, the more likely residents in that neighborhood utilize public transit.*

- **Low Transportation Cost Index:** This index is based on estimates of transportation costs for a family that meets the following description: a 3-person single-parent family with income at 50 percent of the median income for renters for the region/CBSA. *The higher the index, the lower the cost of transportation in that neighborhood.*

- **Jobs Proximity Index:** The jobs proximity index quantifies the accessibility of a given residential neighborhood as a function of its distance to all job locations within a region/CBSA, with larger employment centers weighted more heavily. *The higher the index value, the better the access to employment opportunities for residents in a neighborhood.*

- **Environmental Health Index:** The environmental health index summarizes potential exposure to harmful toxins at a neighborhood level. The higher the index value, the less exposure to toxins harmful to human health. *Therefore, the higher the value, the better the environmental quality of a neighborhood, where a neighborhood is a census block-group.*

Within the City of Santee, there are no significant discrepancies in access to resources and opportunities among different race groups or among persons living above or below poverty, except for Blacks and Native Americans in terms of access to employment. However, these two groups represent very small percentages of the City's population.

Key Impediments

The 2020 Regional AI found the following regional impediments:

- Hispanics and Blacks continue to be under-represented in the homebuyer market and experienced large disparities in loan approval rates.

- Due to the geographic disparity in terms of rents, concentrations of Housing Choice Voucher use have occurred, with a high rate of voucher use in El Cajon and National City.

- Housing choices for special needs groups, especially persons with disabilities, are limited. Housing options for special needs groups, especially for seniors and persons with disabilities, are limited. Affordable programs and public housing projects have long waiting lists.

- Enforcement activities are limited**.** Fair housing services focus primarily on outreach and education; less emphasis is placed on enforcement. Fair housing testing should be conducted regularly.

- Fair housing outreach and education should expand to many media forms, not limited to traditional newspaper noticing or other print forms. Increasingly fewer people rely on the newspapers to receive information. Public notices and printed flyers are costly and ineffective means to reach the community at large.

- Patterns of racial and ethnic concentration are present within particular areas of the San Diego region. In San Diego County, 15.4 percent of residents indicated they spoke English "less than very well" and can be considered linguistically isolated.

In addition, various land use policies, zoning provisions, and development regulations may affect the range of housing choice available. Specifically for Santee, amendments to the Zoning Code to address the following are needed: accessory dwelling units, Low Barrier Navigation Centers (LBNC), emergency shelter capacity and parking standards, and transitional and supportive housing.

Specifically, AB 101 requires a Low Barrier Navigation Center (LBNC) be a use by right in areas zoned for mixed use and nonresidential zones permitting multifamily uses if it meets specified requirements, including: access to permanent housing, use of a coordinated entry system (i.e. Homeless Management Information System), and use of Housing First according to Welfare and Institutions Code section 8255. A LBNC is defined as a Housing First, low barrier, temporary, service-enriched shelter focused on helping homeless individuals and families to quickly obtain permanent housing. Low barrier includes best practices to reduce barriers to entry, such as allowing partners, pets, storage of personal items, and privacy.

AB 2162 requires that supportive housing be allowed by right in zones where multifamily and mixed uses are permitted, including nonresidential zones that permit multifamily uses. Minimum parking requirements for units occupied by supportive housing residents are prohibited if the development is located within ½ mile of a public transit stop.

Furthermore, AB 139 requires that parking standards for emergency shelters for the homeless be established based on staffing level.

Table 27: Opportunity Indicators by Race/Ethnicity							
City of Santee	**Low Poverty Index**	**School Proficiency Index**	**Labor Market Index**	**Transit Index**	**Low Transportation Cost Index**	**Jobs Proximity Index**	**Environmental Health Index**
Total Population							
White, Non-Hispanic	69.83	78.14	49.29	84.84	64.16	44.37	47.24
Black, Non-Hispanic	68.69	79.70	40.44	83.79	66.05	56.11	45.21
Hispanic	69.41	78.36	47.70	84.77	64.75	48.32	46.15
Asian or Pacific Islander, Non-Hispanic	69.90	79.62	47.36	84.22	64.42	49.78	46.20
Native American, Non-Hispanic	70.35	77.07	48.44	84.06	63.91	43.52	47.93
Population below federal poverty line							
White, Non-Hispanic	65.71	77.70	48.15	84.63	64.63	48.01	44.73
Black, Non-Hispanic	69.79	77.16	56.49	85.38	61.96	63.50	49.63
Hispanic	69.44	79.81	49.54	83.95	64.00	48.99	46.61
Asian or Pacific Islander, Non-Hispanic	75.16	74.24	55.79	86.75	66.23	50.10	46.26
Native American, Non-Hispanic	66.24	83.59	61.38	81.16	59.21	30.44	53.33

Note: American Community Survey Data are based on a sample and are subject to sampling variability.
Source: AFFHT Data Table 12; Note 1: Data Sources: Decennial Census; ACS; Great Schools; Common Core of Data; SABINS; LAI; LEHD; NATA

B. Governmental Constraints

Local policies and regulations can impact the price of housing and, in particular, affordable housing. Local policies and regulations may include land use controls, site improvement requirements, fees and exactions, permit processing procedures, and other issues. This section discusses potential governmental constraints to housing investment as well as measures to mitigate potential impacts.

1. LAND USE CONTROLS

The Land Use Element of the Santee General Plan sets forth policies for residential development. These land use policies, combined with zoning regulations, establish the amount and distribution of land to be allocated for different uses. Housing supply and costs are affected by the amount of land designated for residential use, the density at which residential development is permitted, and the standards that govern the character of development. This Housing Element update is for the State-required 6th cycle update that will cover the period beginning on April 15, 2021 and ending on April 15, 2029.An Urban Residential land use designation that permits 30 units per gross acre was added in 2010.

The Land Use Element provides for the following land use designations which allow for residential development:

- Hillside Limited (HL): 0-1 dwelling units per gross acre
- Low Density Residential (R-1): 1-2 dwelling units per gross acre
- Low Density Residential Alternative (R-1-A): 2-4 dwelling units per gross acre (1/4-acre lot minimum)
- Low-Medium Density Residential (R-2): 2-5 dwelling units per gross acre
- Medium Density Residential (R-7): 7-14 dwelling units per gross acre
- Medium High Density Residential (R-14): 14-22 dwelling units per gross acre
- High Density Residential (R-22): 22-30 dwelling units per gross acre
- Urban Residential (R-30): 30 dwelling units per gross acre

In addition to the above residential land use categories, the Town Center Specific Plan area, and the Planned Development District, designated in the General Plan and the Zoning Ordinance, allow residential uses. The Residential-Business District was added to the Zoning Code in 2003 and is consistent with the General Plan. This designation is intended to allow for a single-family residential use or a compatible low-intensity commercial and office use, or a combination of residential/nonresidential uses within existing residences and auxiliary structures. It is intended to encourage a mix of appropriate land uses within transitional neighborhoods that are adjacent to more intensive commercial, office and industrial areas.

The City's residential land use designations provide for the development of a wide range of housing types including single-family dwellings, mobile homes, townhomes, condominiums, accessory dwelling units, and multifamily units at various densities. In 2010, the City adopted the high density residential land use designation, R-30 Urban Residential with a Mixed Use Overlay. The R-30 designation is intended to provide land for development characterized by mid-rise apartment and condominium development that utilizes innovative site planning and building design to provide on-site recreational amenities and open space and be located in close proximity to major community

facilities, business centers and streets of a least major capacity and to be internally consistent. The Mixed Use Overlay for the R-30 designation provides an option for ground-floor commercial uses that promote a variety of services that are conveniently located for residents and the public. However, no development has occurred on the R-30 designation. As part of this Housing Element update, the City is revisiting this designation to provide a density range (e.g. 30 – 35 dwelling units per acre) to facilitate development in this designation.

Gillespie Field Airport Land Use Compatibility Plan (ALUCP)

The City of Santee is located within the Airport Influence Area (AIA) of Gillespie Field. State law requires each local agency having jurisdiction over land uses within the AIA to either: (1) modify its General Plan, zoning ordinance or other applicable land use regulation(s) to be consistent with the Airport Land Use Compatibility Plan (ALUCP); or (2) overrule all or part of the ALUCP within 180 days of adoption of the ALUCP. If the City of Santee fails to take either action, the City is required to submit all land use development proposals to the Airport Land Use Commission (ALUC) for consistency review until such time as the ALUC deems the City's General Plan consistent with the ALUCP.

At the present time, land use proposals within the AIA are subject to land use compatibility determinations by the ALUC. The City is responsible for submitting the Application for a Consistency Determination to the San Diego County Regional Airport Authority. Airport staff would review and make recommendations to the ALUC as to the appropriate determination. The ALUC must act upon an application for a determination of consistency with an ALUCP within 60 days of the ALUC deeming such application complete. The City may override an ALUC determination of inconsistency by a two-thirds vote of the City Council if it can make certain findings and provide a 45-day notice of the same to the ALUC and the California Department of Transportation (Caltrans) per Public Utilities Code Section 21676.5(a). Where possible conflict between the residential density provisions mandated by State law and Airport Safety Zones are identified with a specific land use proposal, the ALUCP density limitations shall apply unless overridden by the City Council. Since this process is not unique to the City of Santee, it does not constitute a distinct or unusual constraint. The Gillespie Field Airport Land Use Compatibility Plan was adopted on January 25, 2010, and is posted on the San Diego Regional Airport Authority's website.[3]

Approximately 54 acres of the residential sites inventory is located within the boundaries of the Gillespie Field ALUCP. Of this acreage, 33 acres fall within Safety Zone 6, which will not negatively affect residential density. The remaining 21 acres fall within Safety Zones 3 and 4. The City will override the Gillespie Field ALUCP on these residential sites as appropriate, and as necessary to ensure adequate sites are available during the planning period unless "no net loss" findings can be made (Section 6, Policy 5.7). Furthermore, the City will monitor development on sites identified in the Housing Element to comply with the "no net loss" requirement pursuant to Government Code Section 65863. Should an approval of development result in a reduction of capacity below the residential capacity needed to accommodate the remaining need, the City will identify and rezone sufficient sites to accommodate the shortfall and ensure "no net loss" in capacity to accommodate the RHNA.

[3] http://www.san.org/sdcraa/airport_initiatives/land_use/adopted_docs.aspx

Town Center Specific Plan

In October 1986, the City of Santee completed a focused effort to plan for the development of property in its geographic core. The Town Center Specific Plan established guidelines for creating a people- and transit-oriented hub for commercial, civic and residential uses along the San Diego River.

Residential Business District

The Residential Business District (RB) designation allows for a single-family residential use or a compatible low-intensity commercial and office use, or a combination of residential/nonresidential uses within existing residences and auxiliary structures. It is intended to encourage a mix of appropriate land uses within transitional neighborhoods that are adjacent to more intensive commercial, office and industrial areas. This designation allows low intensity commercial and office uses that would not result in significant land use compatibility impacts, but that would be greater than otherwise permitted through home occupation regulation. Properties with the RB designation permit all uses allowed in the R-2 designation plus a list of "low-impact" office and commercial uses.

2. RESIDENTIAL DEVELOPMENT STANDARDS

The City's Zoning Ordinance implements the General Plan. It contains development standards for each zoning district consistent with the land use designations of the General Plan. Santee's Zoning Ordinance provides for the following residential districts:

- ***Hillside/Limited Residential (HL)*** -- (0-1 dwelling units/gross acre): This designation is intended for residential development in areas that exhibit steep slopes, rugged topography and limited access. Residential uses are characterized by rural large estate lots with significant permanent open space area, consistent with the constraints of slope gradient, soil and geotechnical hazards, access, availability of public services and other environmental concerns.

- ***Low Density Residential (R-1)*** -- (1-2 dwelling units/gross acre): This designation is intended for residential development characterized by single-family homes on one-half acre lots or larger that is responsive to the natural terrain and minimizes grading requirements. The intent of this designation is to provide development of a semi-rural character through the use of varying setbacks and dwelling unit placement on individual parcels.

- ***Low-Density Residential Alternative (R-1-A)*** -- (2-4 dwelling units/gross acre): This designation is intended for residential development characterized by single-family homes on one-quarter acre lots or larger which provide a transitional option between the R-2 (6,000 square foot lot) and the larger R-1 (20,000 square foot lot) zones.

- ***Low-Medium Density Residential (R-2)*** -- (2-5 dwelling units/gross acre): This designation is intended for residential development characterized by single-family homes in standard subdivision form. It is normally expected that the usable pad area within this designation will be a minimum of 6,000 square feet.

- ***Medium Density Residential (R-7)*** -- (7-14 dwelling units/gross acre): This designation is intended for a wide range of residential development types including attached and detached single-family units at the lower end of the density range and multifamily attached units at the higher end of the density range. Areas developed under this designation should exhibit adequate access to streets of at least collector capacity and be conveniently serviced by neighborhood commercial and recreational facilities.

- ***Medium High Density Residential (R-14)*** -- (14-22 dwelling units/gross acre): This designation is intended for residential development characterized at the lower end of the density range by multifamily attached units and at the upper end of the density range by apartment and condominium buildings. It is intended that this category utilize innovative site planning, provide on-site recreational amenities and be located in close proximity to major community facilities, business centers and streets of at least major capacity.

- ***High Density Residential (R-22)*** -- (22-30 dwelling units/gross acre): This designation is intended for residential development characterized by mid-rise apartment and condominium buildings characteristic of urban high density development in close proximity to community facilities and services, public transit services, and major streets. It is intended that this category utilize innovative site planning and building design to provide on-site recreational amenities and open space.

- ***Urban Residential (R-30)*** -- (30 dwelling units/gross acre): This designation is intended for residential development characterized by mid-rise apartment and condominium development typical of urban development at higher densities than R-22. This designation is intended for architecturally designed residential development, up to four stories, with parking facilities integrated in the building design. Areas developed under this designation would be located in close proximity to major community facilities, commercial and business centers and streets of at least major capacity. Development amenities would include on-site business centers, fitness and community rooms, and indoor and outdoor recreation facilities. Site design would implement pedestrian-friendly design concepts, including separated sidewalks, landscaped parkways, traffic calming measures, and enhanced access to transit facilities and services. Measures that reduce energy and water consumption are required.

Santee's Zoning Ordinance establishes residential development standards for each zone to ensure quality of development in the community. Site Development Criteria as specified in Section 13.10.040 of the Zoning Ordinance are presented in Table 28.

Table 28: Basic Residential Development Standards								
Characteristic of Lot, Location & Height	**HL**	**R-1**	**R-1-A**	**R-2**	**R-7**	**R-14**	**R-22**	**R-30**
Minimum Net Lot Area (square feet)	Avg. 40,000 Min. 30,000	Avg. 20,000 Min. 15,000	Avg. 10,000 Min. 8,000	6,000	none			
Density Ranges (du/gross acre)	0-1	1-2	2-4	2-5	7-14	14-22	22-30	30 (no range)
Minimum Lot Dimensions (width/depth)	150'[1]/ 150'	100'[1]/ 100'	80'[1]/ 100'	60'/ 90'	none			
Minimum Flag Lot Frontage	20'				36'			
Maximum Lot Coverage	25%	30%	35%	40%	55%	60%	70%	75%
Setbacks[2]								
Front[3]	30'	20'	20'	20'	20'	10'	10'	10'
Exterior side yard	15'	15'	15'	10'	10'	10'	10'	10'
Interior side yard	10'	10'	8'	5'	10'	10'	10'	10' or 15'[4]
Rear	35'	25'	25'	20'	10'	10'	10'	10' or 15'[4]
Maximum Height	35' (three stories)					45' (3 stories)	55' (4 stories)	55' (4 stories)
Private Open Space (sq. ft. per unit)	--	--	--	--	100	100	60	60
Parking Requirements (off-street)	2 spaces in a garage (all single-family, detached homes)				The following applies to multifamily, townhomes, duplexes, zero lot line, etc. **Resident spaces:** <u>Studio & One-bedroom unit</u>: 1.5 spaces/unit, with 1/unit in a garage or carport R-30 zone: 1 space/unit <u>Two or more bedroom unit:</u> 2 spaces/unit, With 1/unit in a garage or carport **plus, Guest Spaces:** 1 space/4 units R-30 Zone: 1 space/10 units			

Source: City of Santee, October 2019.
Notes: [1]For lots located on cul-de-sacs and knuckles, see SMC Zoning Ordinance Table 13.l0.040.A, note 1.
[2] All Setbacks are measured in feet from the <u>property line</u>, not a street, sidewalk, or fence line.
[3]Setbacks adjacent to Major, Prime or Collector roads may be greater (SMC Table 13.10.040.B).
[4]15 feet when abutting a single-family residential zone and buildings exceed 35 feet (two stories).

Lot Standards

The minimum lot sizes for residential lots in Santee range from 6,000 for the R-2 zone, 8,000 for the R-1-A zone, 15,000 for the R-1 zone, to 30,000 for Hillside/Limited Residential (HL) zone. Minimum lot widths range from 60' for the R-2 zone, 80' for the R-1-A zone, 100' for the R-1 zone, and 150' for the HL zone. There are no minimum lot sizes or minimum lot widths for the R-7, R-14, R-22 or R-30 zones. These minimum lot size standards are typical, cover the majority of the City, and do not constrain residential development.

Lot Coverage

The Zoning Ordinance establishes a range of maximum lot coverage, by zone. The largest hillside lots have the smallest maximum lot coverage at 25 percent. Maximum lot coverage for the R-1, R-1-A, and R-2 zones increase by 5, or 30, 35, and 40 percent respectively. The zones which permit greater density also permit greater maximum lot coverage: R-7 permits 55 percent maximum lot coverage, R-14 permits 60 percent, R-22 permits 70 percent, and R-30 permits 75 percent maximum lot coverage. The City's lot coverage standards are typical and the larger the lot, the more feasible to achieve the maximum allowable density.

Yard Setbacks

All residential zones have a 10' – 20' front setback, with the exception of the Hillside/Limited Residential zone which has a 30' front setback. Side yard setbacks typically range from 15' – 25', and typical rear yard setbacks range from 10' to 25'. Again, the Hillside/Limited Residential zone has a larger rear yard setback at 35'. These setbacks are intended to provide a safe and visually cohesive aesthetic to the residential development throughout the city.

Height Limits

Santee allows building heights up to 35' or three stories in most residential zones in the City. The R-14 residential zone allows heights of up to 45', or three stories, and the R-22 and R-30 zones allow heights of up to 55', or four stories. The three and four-story height limits allow the achievement of higher densities in the R-14 and R-22 residential zones.

Parking Standards

In addition to the development standards above, Santee requires a certain number of parking spaces to be provided for each new residential unit. The Santee Zoning Code requires two parking spaces in a garage for all single-family residential zones, including in HL, R-1, R-1-A, and R-2. Parking standards for the multi-family zones are established primarily by the number of bedrooms in the dwelling unit. For Studio and one-bedroom units, 1.5 spaces/unit with 1/unit in a garage or carport are required. For two or more bedroom units, 2 spaces/unit are required with 1/unit in a garage or carport. Guest spaces are required at 1 space/4 units. The R-30 Zone allows for reduced resident and guest parking. Santee's parking requirements are designed to accommodate vehicle ownership rates associated with different residential uses. The cost associated with parking construction (particularly covered parking) can be viewed as a constraint to affordable housing development, particularly for multifamily housing. Santee complies with the State Density Bonus provisions for senior and affordable housing, and consistent with State law, provides additional reductions in parking requirements if the project is located close to public transportation. In addition, as part of the adoption of the Art & Entertainment District Overlay in the City's Town Center, parking requirements have been reduced.

3. FLEXIBILITY FROM DEVELOPMENT STANDARDS

Santee provides several mechanisms to maintain flexibility in development standards. This flexibility is an important means to address limitations inherent at a specific site (e.g., topographic, geographic, physical, or otherwise), as well as provide a means to address other important goals and objectives of the City Council, such as providing affordable housing for all income groups.

Planned Development District

The Planned Development District is intended for select properties within the City where a variety of development opportunities may be viable and where the City wishes to encourage innovative and very high quality development in a manner which may not be possible under standard land use designations and their corresponding zones. This designation provides for mixed-use development potential including employment parks, commercial, recreational and various densities of residential development pursuant to a development plan and entitlements being approved by the City Council. More specifically, single family dwellings, single family attached units and multi-family are all permitted uses in the Planned Development District, with approval of a Development Review Permit.

Variance and Minor Exception

The purpose of a variance is to provide flexibility from the strict application of development standards when special circumstances pertaining to the property such as size, shape, topography, or location deprives such property of privileges enjoyed by other property in the vicinity and in the same district, consistent with the objectives of the development code.

The purpose of a minor exception is to provide flexibility necessary to achieve the objectives of the development code. Selected site development regulations and applicable off-street parking requirements are subject to administrative review and adjustment in those circumstances where such adjustment will be compatible with adjoining uses or is necessary to provide reasonable accommodation for persons with disabilities, and consistent with state or federal law, and consistent with the goals and objectives of the general plan and the intent of the code.

Density Bonus Ordinance

On June 12, 2019, the City of Santee updated the City's Density Bonus Ordinance. The substance of the density bonus program was removed from the municipal code because the program is governed by state law, that is explicitly applicable to charter cities, such as Santee. Revisions refer to state law to avoid the need to modify the code in response to each state law amendment. The Density Bonus Ordinance provides incentives to developers for the production of housing affordable to lower income households, moderate income households and senior citizens. However, new changes to the density bonus law passed in 2019 and 2020 may necessitate a review of the City's Density Bonus Ordinance to ensure continued compliance with State law.

4. PROVISIONS FOR A VARIETY OF HOUSING TYPES

Housing Element law specifies that jurisdictions must identify sites to be made available through appropriate zoning and implement development standards to encourage and facilitate the development of housing for all economic segments of the community. This includes single-family units, multifamily units, accessory dwelling units, manufactured housing, mobile home parks, residential care facilities, transitional and supportive housing, single-room occupancy (SRO) buildings, farm worker housing, and housing for the homeless. Santee provides for a wide range of housing types throughout the community. Table 29 summarizes the housing types permitted in each of the City's primary residential zones. Each residential use is designated by a letter denoting whether the use is permitted by right (P), requires a Conditional Use Permit (CUP), or is not permitted (--).

Table 29 : Use Regulations in Residential Districts

USES	HL	R-1	R-1-A	R-2	R-7	R-14	R-22	R-30	IG
Single-family Dwellings	P	P	P	P	P	--	--	--	--
Multifamily Dwellings	--	--	--	--	P	P	P	P	--
Manufactured Housing	P	P	P	P	P	P*	P*	--	--
Mobile Home Parks	CUP	CUP	CUP	CUP	CUP	CUP	CUP	--	--
Accessory Dwelling Units	P	P	P	P	P	P	P	P	--
Residential Care Facilities -Accessory Use: 6 or fewer -Non-Accessory Use: 7 or more	 P --	 P --	 P --	 P CUP	 P CUP	 P CUP	 P CUP	 P CUP	 -- --
Transitional and Supportive Housing	P	P	P	P	P	P	P	P	--
Single Room Occupancy (SRO)	--	--	--	--	P	P	P	P	--
Emergency Shelters	--	--	--	--	--	--	--	--	P

Source: City of Santee Municipal Code, 2020.
Notes: P = Permitted; CUP = Conditional Use Permit.
*Permitted within a mobile home park.

Single-family Dwellings

Single-family homes are allowed in the following residential zones: Hillside/Limited (HL), Low Density (R-1), Low-Alternative (R-1A), Low-Medium Density (R-2), and Medium Density (R-7). The HL zone allows up to one dwelling unit /gross acre. It is intended for areas with steep slopes, rugged topography and limited access. Parcels zoned HL are found in the northern part of the City, and also in the southwest and southeast corners of the City. The R-1 zone permits 1 - 2 dwelling units/acre, intended for residential development on one-half acre lots or larger. Parcels zoned R-1 can be found in the north, southwest and eastern and southeastern areas of the City. The R-1A zone permits 2 - 4 dwelling units/acre. Lot sizes are 10,000 square feet or larger. This designation is intended to provide a transition between areas of denser development in the R-2 designation, and lower density larger lot size development in the R-1 and HL land use designations.

R-2 allows 2 - 5 dwelling units per acre and is intended for single-family homes in standard subdivision form characterized by lots of a minimum of 6,000 square feet. It covers the largest portion of the City planned for residential uses and is typically found on level terrain. R-7 is medium density residential zone that allows 7 – 14 units/acre. The R-7 zone is intended for a wide range of

residential development including attached and detached single-family units at the lower end of the density range. Areas developed under this zone should be close to streets of at least collector size, and should be conveniently served by neighborhood commercial and recreational facilities.

Multifamily Units

Multifamily units are dwellings that are part of a structure containing one or more other dwelling units, or a non-residential use. An example of the latter is a mixed-use project where, for example, one or more dwelling units are part of a structure that also contains one or more commercial uses (retail, office, etc.). Multifamily dwellings include: duplexes, triplexes, fourplexes (buildings under one ownership with two, three or four dwelling units, respectively, in the same structure), apartments (five or more units under one ownership in a single building); condominiums, townhouse development (three or more attached dwellings where no unit is located over another unit), and other building types containing multiple dwelling units (for example, courtyard housing, rowhouses, stacked flats, etc.).

Multifamily Units are allowed in the upper density range of the Medium Density (R-7) zone, and in the Medium High Density (R-14), High Density (R-22), and Urban Residential (R-30) zone. The R-7 zone permits up to 14 units per gross acre while up to 22 units per gross acre are permitted in the R-14 zone. Up to 30 units per gross acre are permitted in the R-22 zone and the density for the R-30 zone is 30 units per gross acre.

Accessory Dwelling Units

An accessory dwelling unit (ADU) is an attached or a detached residential dwelling unit that provides permanent provisions for living, sleeping, eating, cooking and sanitation complete independent living facilities for one or more persons, is located on a lot with an existing or proposed main house, and includes an entrance separate from the main house. An ADU can include a manufactured home.

A junior accessory dwelling unit (JADU) is a residential unit, no more than 500 square feet in size, that has an efficiency kitchen, is contained entirely within an existing or proposed single-family main house or attached garage, and has a separate entrance. It can either have its own bathroom or share with the main house. An efficiency kitchen is a kitchen that contains the following: (a) a cooking facility with appliances; (b) a food prep counter(s) with at least 15 square feet in area; and (c) food storage cabinets totaling at least 30 square feet of shelf space. ADUs and JADUs may be an alternative source of affordable housing for lower income households and seniors.

The City updated its ADU/JADU guidelines in 2019 to comply with changes in state law. ADUs/JADUs are only permitted on lots zoned Residential, and in some circumstances Mixed Use zones. ADUs/JADUs meeting certain criteria can apply for a building permit only. All other ADUs must first go through a separate ministerial ADU Permit process, prior to submitting for a building permit, to ensure it conforms to the development standards contained in Section 13.10.045 of the Zoning Code.

As a measure to increase the supply of affordable housing, the City of Santee took action to waive Development Impact Fees for the construction of ADUs for a five-year period, effective September 2019. ADUs can provide needed affordable housing for residents of Santee and can also meet the

need for multi-generational housing. The City believes that the waiving of Development Impact Fees will spur the construction of additional ADUs in Santee.

Manufactured Housing/Mobile Home Parks

Manufactured housing and mobile homes offer an affordable housing option to many low and moderate income households. According to the California Department of Finance, there were 2,336 mobile homes in the City in January 2020. The City permits manufactured housing placed on a permanent foundation in all residential zones that allow single-family housing and within mobile home parks in accordance with the Santee Zoning Ordinance.

The Zoning Ordinance also contains a Mobile Home Park Overlay District to accommodate mobile home parks in the City. According to Section 13.22.030, the Mobile Home Park Overlay District may be applied in combination with any other residential district with the approval of a Conditional Use Permit (CUP). The Overlay District establishes specific development standards for a mobile home park and is applied over the base residential district. A Mobile Home Park Overlay district is indicated on the zoning district map by the letters "MHP."

Residential Care Facilities

Residential care facilities can be described as any State-licensed family home, group care facility or similar facility for 24-hour non-medical care of persons in need of personal services, supervision, or assistance essential for sustaining the activities of daily living. In accordance with State law, Santee permits residential care facilities serving six or fewer persons within all residential zones, subject to the same development review and permit processing procedures as traditional single-family or multifamily housing. Residential care facilities serving more than six persons are permitted with approval of a CUP within the R-2, R-7, R-14, R-22, and R-30 zones. Potential conditions for approval may include hours of operation, security, loading requirements, and management. Conditions would be similar to those for other similar uses in the same zones and would not serve to constrain the development of such facilities. Occupancy standards for residential care facilities are the same as occupancy standards for all other residential uses. The City has not adopted a spacing requirement for residential care facilities.

Transitional and Supportive Housing

The Zoning Ordinance definition for "transitional housing" references the State's definition contained in Health and Safety Code Section 50675.2, which defines "transitional housing"" and "transitional housing development" as "buildings configured as rental housing developments, but operated under program requirements that call for the termination of assistance and recirculation of the assisted unit to another eligible program recipient at some predetermined future point in time, which shall be no less than six months."

The definition for "supportive housing" in the Zoning Ordinance also references the State's definition contained in Health and Safety Code Section 50675.14(b), which defines the use as "housing with no limit on length of stay, that is occupied by the target population, and that is linked to onsite or offsite services that assist the supportive housing resident in retaining the housing, improving his or her health status, and maximizing his or her ability to live and, when possible, work in the community." "Target population" is defined in the same subsection of the Health and Safety Code Section as "persons, including persons with disabilities, and families who are 'homeless,' as that term is defined by Section 11302 of Title 42 of the United States Code, or who are 'homeless

youth,' as that term is defined by paragraph (2) of subdivision (e) of Section 12957 of the Government Code."

The City permits transitional and supportive housing that meets applicable Health and Safety Code definitions in all residential zones, consistent with State law. The same development standards and permit process that applies to single-family or multifamily housing applies to transitional and supportive housing.

AB 2162 (September 2018) and AB 2988 (May 2020) require that supportive housing meeting specific criteria to be permitted by right in zones where multi-family and mixed-use developments are permitted. Specific criteria include the size of the project and percentage set aside for target population, and specified amount of floor area for supportive services, among others. The Santee Zoning Code will be amended to include the requirements of AB 2162 and AB 2988.

Single Room Occupancy Buildings

SRO buildings are defined in the Santee Zoning Ordinance as "a building providing single-room units for one or more persons with or without shared kitchen and bath facilities, including efficiency units per Health and Safety Code Section 17958.1." SRO buildings are considered suitable to accommodate the housing needs of extremely low income households. This housing type is permitted in all multifamily zones, subject to all Municipal Code and other standards applicable to any new multifamily residential building, including, but not limited to, density, height, setback, on-site parking, lot coverage, development review, compliance with the California Building Code, building fees, charges and other requirements generally applicable to a proposed multifamily development in the Zone District in which a property is located.

Farm Worker and Employee Housing

The California Employee Housing Act requires that housing for six or fewer employees be treated as a regular residential use. The City's Zoning Code was updated in 2019 to add Agricultural Employee Housing. This housing, as defined in Section 13.04.140, is allowed in residential districts pursuant to Health and Safety Code Sections 17021.5 and 17021.6 and is subject to regulations that apply to other residential dwelling of the same type in the same zone.

Emergency Shelters

The Zoning Ordinance definition for "emergency shelter" references the State's definition contained in Health and Safety Code Section 50801(e), which defines the use as "housing with minimal supportive services for homeless persons that is limited to occupancy of six months or less by a homeless person. No individual or household may be denied emergency shelter because of an inability to pay." Although no emergency shelters are currently located within Santee, these facilities are permitted and without discretionary review on more than seven acres on eight parcels on Woodside Avenue within the General Industrial "IG" zone.

- Vacant or underutilized parcels within the IG zone are presented in the Appendix. These parcels are considered underutilized because they are currently vacant or being used for outdoor storage or fleet storage with limited or no site improvements. The undeveloped and underutilized IG-zoned parcels could accommodate an emergency shelter to accommodate at least 25 homeless individuals (which represents the number of identified unsheltered homeless population in Santee as of 2020 by the Regional Task Force on the Homeless) and

at least one year-round emergency shelter. The IG zone is suitable for emergency shelters because shelters are compatible with a range of uses that are common in suburban communities and allowed in the IG zone (e.g., motels/hotels, office buildings, religious institutions, athletic or health clubs, public buildings, educational facilities, etc.);

- The IG-zoned parcels on Woodside Avenue are located approximately one mile from public bus service that connects to regional transit, including trolley service;

- Existing uses in the IG zone are primarily light industrial, warehousing, and office uses – no heavy industrial uses are present; and

- The parcels are not known to be constrained by the presence of hazardous materials either on or adjacent to the properties.

Emergency shelters are subject to ministerial Development Review Permit approval. The following specific and objective development standards are established in the Municipal Code and apply to emergency shelters:

- An emergency shelter shall not be located within three hundred feet of another shelter; and

- The agency or organization operating the shelter shall submit a Facility Management Plan containing facility information, including the number of persons who can be served nightly, the size and location of onsite waiting and intake areas, the provision of onsite management, exterior lighting details, and onsite security during hours of operation.

AB 139 changes the way local governments can regulate parking requirements for emergency shelters. Parking requirements can be set to be adequate for shelter staff, but the overall parking requirements for shelters may not exceed the requirements for residential and commercial uses in the same zone. The Santee Zoning Code will be amended to include these requirements.

4. HOUSING FOR PERSONS WITH DISABILITIES

Both the federal Fair Housing Amendment Act (FHAA) and the California Fair Employment and Housing Act direct local governments to make reasonable accommodations (i.e. modifications or exceptions) in their zoning laws and other land use regulations when such accommodations may be necessary to afford disabled persons an equal opportunity to use and enjoy a dwelling.

The City conducted an analysis of the Zoning Ordinance as part of this Housing Element update, permitting procedures, development standards, and building codes to identify potential constraints for housing for persons with disabilities. The City's policies and regulations regarding housing for persons with disabilities are described below.

Zoning and Land Use

Under State Lanterman Developmental Disabilities Services Act (aka Lanterman Act), small State-licensed residential care facilities for six or fewer persons must be treated as regular residential uses and permitted in all residential districts; Santee is compliant with the Lanterman Act. The Land Use Element and Zoning Ordinance provide for the development of multifamily housing in the R-7, R-14, R-22, and R-30 zones. Traditional multifamily housing for persons with special needs, such as apartments for seniors and the disabled, are considered regular residential uses permitted in these zones. The City's land use policies and zoning provisions do not constrain the development of such housing. State-licensed residential care facilities for more than six persons are conditionally permitted in the R-2, R-7, R-14, R-22, and R-30 zones. Potential conditions for approval may include hours of operation, security, loading requirements, and management. Conditions would be similar to those for other similar uses in the same zones and would not serve to unduly constrain the development of residential care facilities for more than six persons. Occupancy standards for residential care facilities are the same as occupancy standards for all other residential uses. The City has not adopted a spacing requirement for residential care facilities.

The Santee Zoning Code includes provisions for transitional and supportive housing. These facilities may serve persons with disabilities. Consistent with State law, transitional and supportive housing facilities as defined in the Health and Safety Code are permitted in all residential zones.

The City also accommodates persons with disabilities in group care facilities. Group care facilities serve mentally disabled, mentally disordered or otherwise handicapped persons regardless of whether they are living together as a single household unit. These facilities are separate from State-licensed residential care facilities and require approval of a CUP in all residential zones. Group care facilities are subject to the same review process, approval criteria, and findings as all other uses that require a CUP, including large residential care facilities.

It may also be reasonable to accommodate requests from persons with disabilities to waive a setback requirement or other standard of the zoning ordinance to ensure that homes are accessible for the mobility impaired. Whether a particular modification is reasonable depends on the circumstances, and must be decided on a case-by-case basis. Consistent with the State's model Reasonable Accommodation Ordinance, the Santee Zoning Code includes a ministerial procedure for handling requests for reasonable accommodation. When a request for reasonable accommodation is filed with the Department of Development Services, it is referred to the Development Services Director (Director) for review and consideration. The Director must consider the following criteria when determining whether a requested accommodation is reasonable:

1. The Applicant making the request for reasonable accommodation is an individual protected under the Federal Fair Housing Amendments Act of 1988.
2. The accommodation is necessary to make a specific dwelling unit(s) available to an individual protected under the Federal Fair Housing Amendments Act of 1988.
3. The requested accommodation would not impose an undue financial or administrative burden on the City.
4. The requested accommodation would not require a fundamental alteration in the nature of a program, policy, and/or procedure.

If necessary to reach a determination on the request for reasonable accommodation, the Director may request further information from the applicant consistent with the Federal Fair Housing Amendments Act of 1988, specifying in detail what information is required. Not more than 30 days after receiving a written request for reasonable accommodation, the Ordinance requires the Director to issue a written determination on the request. In the event that the Director requests further information pursuant to the paragraph above, this 30-day period is suspended. Once the Applicant provides a complete response to the request, a new 30-day period begins.

Building Codes

The City enforces Title 24 of the California Code of Regulations that regulates the access and adaptability of buildings to accommodate persons with disabilities. No unique restrictions are in place that would constrain the development of housing for persons with disabilities. Compliance with provisions of the Code of Regulations, California Building Standards Code, and federal Americans with Disabilities Act (ADA) is assessed and enforced by the Building Services Division of the Department of Development Services as a part of the building permit submittal.

Government Code Section 12955.1(b) requires that 10 percent of the total dwelling units in multifamily buildings without elevators consisting of three or more rental units or four or more condominium units are subject to the following building standards for persons with disabilities:

1. The primary entry to the dwelling unit shall be on an accessible route unless exempted by site impracticality tests.
2. At least one powder room or bathroom shall be located on the primary entry level served by an accessible route.
3. All rooms or spaces located on the primary entry level shall be served by an accessible route. Rooms and spaces located on the primary entry level and subject to this chapter may include but are not limited to kitchens, powder rooms, bathrooms, living rooms, bedrooms, or hallways.
4. Common use areas shall be accessible.
5. If common tenant parking is provided, accessible parking spaces are required.

Permit Processing

Requests for reasonable accommodation with regard to zoning, permit processing, and building codes are reviewed and processed by the Building Services Division of the Department of Development Services within 30 days of receipt and without the requirement for payment of a fee. The reasonable accommodation procedures are based on the State's model ordinance, and they clearly state how to apply for and obtain reasonable accommodation; therefore, they do not represent a constraint on the development or improvement or housing for persons with disabilities.

Definition of Family

A "family" is defined in the Santee Zoning Ordinance as one or more individuals living together as a single household unit. The City's Ordinance does not regulate residency by discriminating between biologically related and unrelated persons nor does it regulate or enforce the number of persons constituting a family. In conclusion, Santee's definition of "family" does not restrict access to housing for persons with disabilities.

Conclusion

The City fully complies with ADA requirements and provides reasonable accommodation for housing intended for persons with disabilities on a case-by-case basis.

6. DEVELOPMENT PERMIT PROCEDURES AND PROCESSING TIMES

The evaluation and review process required by local jurisdictions often contributes to the cost of housing in that holding costs incurred by developers are ultimately reflected in the units selling price. Santee's development review process is designed to encourage site and architectural development, which exemplify the best professional design practices. The Development Review Permit process helps ensure that each new project achieves the intent and purpose of the General Plan land use designation and zone in which the project is located. Together, the following figures and tables show the type of approvals required for the most common types of residential development as well as the reviewing authority.

Residential projects subject to the Development Review process follow two distinct review paths, depending on the scope of the project. The City Council reviews larger projects during a noticed public hearing. The City Council functions as the Planning Commission and therefore approval of applications in Santee is not subject to two discretionary bodies. This streamlined review process saves a considerable amount of time when compared to processes of many other jurisdictions that require separate Planning Commission and City Council approval of large residential projects. Other projects are reviewed by the Director. A summary of the two review processes are listed below.

Table 30: Development Review Bodies

Director Review	City Council Review
1) New construction on vacant property 2) One or more structural additions or new buildings, either with a total floor area of one thousand square feet or more. 3) Construction of an accessory dwelling unit. 4) Reconstruction or alteration of existing buildings on sites when the alteration significantly affects the exterior appearance of the building or traffic circulation of the site. 5) Development in the Hillside Overlay zone.	1) Any multi-family residential project 2) Any single family residential project where a tentative map or tentative subdivision map is required. 3) The conversion of residential, commercial or industrial buildings to condominiums.

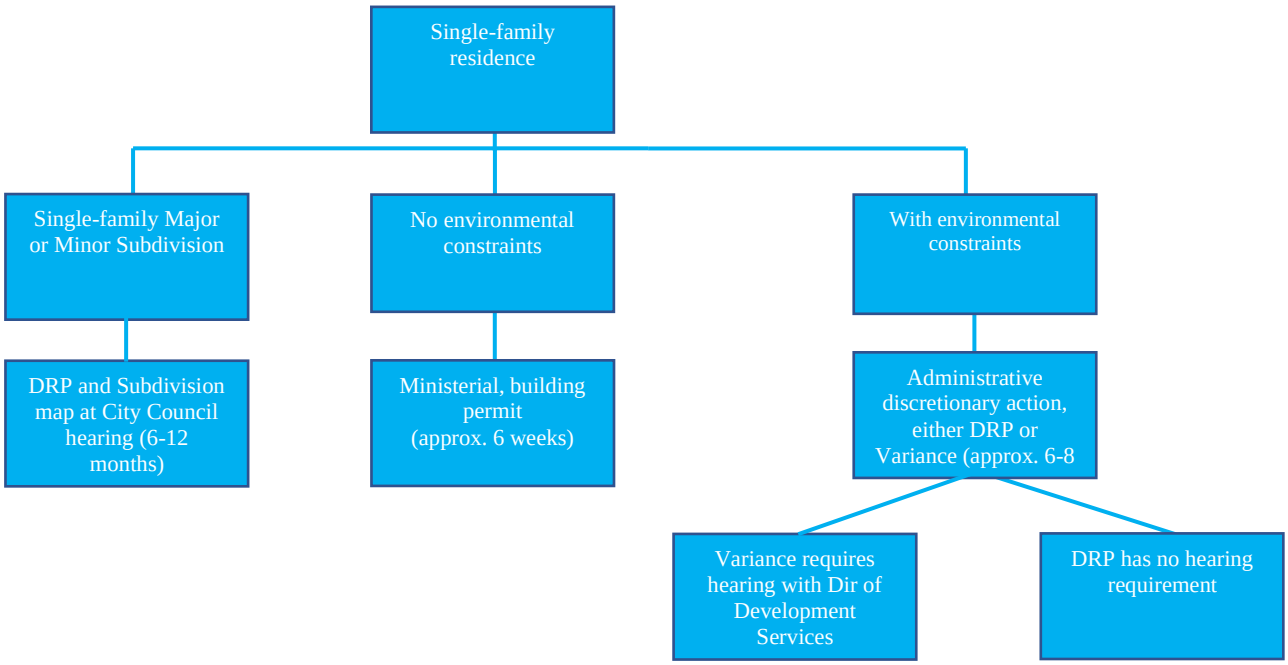
A single-family dwelling, on an existing parcel located in a zone that permits single-family residential development (HL, R-1, R-1-A, R-2, and R-7 zones) that does not contain environmental constraints such as any natural slopes greater than 10 percent and is not located in a biological resource area, on a ridgeline, or in a similar type of visually prominent location, is subject to a building permit to ensure compliance with zoning regulations and the building and fire codes. Approval of a building permit for a single-family dwelling meeting these criteria is ministerial. Processing time is approximately six weeks, but highly dependent on the quality of the initial submittal.

If the proposed single-family project does not conform to the development regulations of the zone or does not meet the above criteria, it requires an administrative discretionary action. Examples of an administrative discretionary approval include an administrative Development Review Permit (DRP) or Variance. An administrative Variance requires a public hearing before the Director while

an administrative Development Review Permit does not. Approval is based on findings as outlined in the zoning regulations. Processing time for a hearing before the Director or non-hearing decision is approximately six weeks, but may extend to two months or more when processing involves compliance with the California Environmental Quality Act (CEQA).

A single-family project, which includes a minor or major subdivision, requires approval of a Development Review Permit and subdivision map by the City Council at a public hearing. The basis for approval is consistency with the General Plan, Zoning Ordinance, and subdivision regulations. The length of time required to process a subdivision map is variable, based on the size and complexity of the project. In most cases, the approval process can be completed in six months to a year.

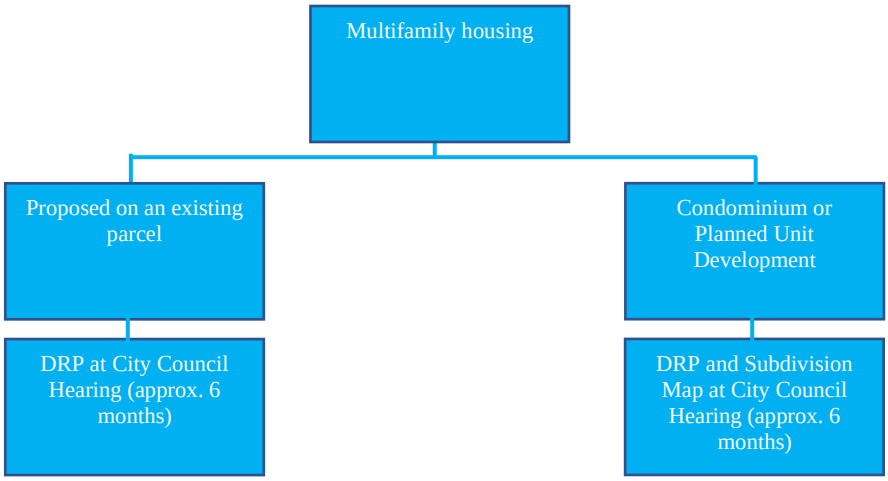
Figure 8: Permitting process for single-family detached housing



Multifamily housing on an existing parcel in any multi-family residential zone (R-7, R-14, R-22, and R-30) is subject to a discretionary City Council approval of a Development Review Permit. Processing time is approximately six months, but varies on the size of the project and quality of the initial submittal.

If the multifamily housing is proposed as a condominium, or planned unit development, the approval process also includes a subdivision map. The subdivision map and Development Review Permit are processed concurrently. Processing time is approximately six months and the project is also subject to discretionary review by the City Council.

Figure 9: Permit process for multifamily housing



Design considerations for all residential projects

The Development Review Permit (DRP) process stipulates that the following items should be evaluated when designing a project:

- Relationship of building and site to surrounding area
  - Evaluate the project's fringe effects on adjacent parcels
  - Evaluate the project's proximity to transportation (including active) facilities
  - Evaluate the project's relationship to the surrounding area
- Site design
  - Setbacks
  - Evaluate building placement for adequate ventilation
  - Consider topography and other on-site natural features in the design
  - Evaluate pedestrian and vehicle circulation
- Landscaping
  - Choose plant palette to ensure water efficiency
  - Approved street trees
- Grading
  - Lessen proposed grading
- Signs
  - On site plan plot all proposed free-standing signs
  - Provide details for all free standing signs
- Lighting
  - Provide sufficient lighting for the proposed use
  - Keep all site lighting facing downward to minimize impacts on neighbors
- Architectural design
  - Visual relief from long elevations through wall plane offsets
  - Use of colors and materials
  - Variations in vertical setbacks to reduce mass of larger buildings

Pre-Application process for projects that require City Council review

Single-family major and minor subdivisions and multifamily housing proposals typically go through a Pre-Application. The Pre-Application process is designed to identify issues which may impact the design of the project early in the approval process. The process entails submitting a Pre-Application, supporting documents, and the Pre-Application fee. Approximately four weeks from the date of the submittal, a Design Conference (pre-application meeting), is held at City Hall to provide the applicant the opportunity to meet with the reviewing City staff. This early identification of issues is intended to limit possible delays and plan revisions.

Table 31: Approval Required

Housing Type	HL	R-1	R-1-A	R-2	R-7	R-14	R-22	R-30
Single-family detached	Permitted by right					Not permitted		
Single-family attached	Not permitted				Permitted by right	Not permitted		
Single-family major and minor subdivisions	Not permitted	DRP and Subdivision map required			Not Permitted	Not permitted		
Multifamily	Not permitted				DRP required			

Variances

The City of Santee has a process to offer variances to provide flexibility from the strict application of development standards when special circumstances pertaining to a property such as size, shape, topography, or location deprives the property of privileges enjoyed by other properties in the vicinity and in the same district, consistent with the objectives of the development code. Any variance granted is subject to such conditions as will assure that the authorized adjustment does not constitute a grant of special privileges inconsistent with the limitations upon other properties in the vicinity and district in which the property is situated.

For residential development, the Director is authorized to grant variances with respect to development standards such as, but not limited to, fences, walls, hedges, screening, and landscaping; site area, width, and depth; setbacks; lot coverage; height of structures; usable open space; performance standards; and to impose reasonable conditions. Conditions may include, but shall not be limited to, requirements for setbacks, open spaces, buffers, fences, walls, and screening; requirements for installation and maintenance of landscaping and erosion control measures and other improvements, requirements for street improvements and dedications, regulation of vehicular ingress and egress, and traffic circulation; establishment of development schedules or time limits for performance or completion; requirements for periodical review by the Director; and such other conditions as the Director may deem necessary to ensure compatibility with surrounding uses, to preserve the public health, safety, and welfare, and to enable the Director to make the findings outlined in the paragraph below. Variances may be granted in conjunction with conditional use permits and development review permits. Such variances do not require a separate application or a separate public hearing.

An application for a variance is filed with the Department in a form prescribed by the Director, who holds a public hearing on each application. Before granting a variance, the Director must make the following findings:

1. That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary physical hardship inconsistent with the objectives of the General Plan and intent of the Zoning code;
2. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property that do not apply generally to other properties in the same zoning district;
3. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties in the same zoning district; and
4. That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same district, and will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.

The review and approval of a variance typically requires 6 months.

Conditional Use Permits and Minor Conditional Use Permits

The purpose of the regulations for the City of Santee that govern conditional use permits and minor conditional use permits are to provide for flexibility when special circumstances exist, regulate uses that have the potential to adversely affect adjacent properties, ensure land use consistency with the General Plan, and promote a visually attractive community. An application for a conditional use permit or minor conditional use permit is filed with the Development Services Department. Conditional use permits are approved by the City Council, and minor conditional use permits are approved by the Director, following a public hearing with the appropriate body. The conditional use permit and minor conditional use permit processes are intended to afford an opportunity for broad public review and evaluation of these requirements and characteristics, to provide adequate mitigation of any potentially adverse impacts, and to ensure that all site development regulations and performance standards are provided in accordance with the zoning ordinance. Generally, review and approval of a conditional use permit requires approximately 6 months.

Reasonable conditions that may be granted through the use of these permits that relate to residential development include, but are not limited to, the following: setbacks, open spaces, buffers, fences, walls, and screening; requirements for installation and maintenance of landscaping, erosion control measures, and other improvements; requirements for street improvements and dedications, regulation of vehicular ingress and egress; establishment of development schedules or time limits for performance or completion; requirements for periodic review; and such other conditions as the City Council or the Director, as appropriate, may deem necessary to ensure compatibility with surrounding uses, to preserve the public health, safety, and welfare, and to enable the City Council or the Director, to make the required findings.

For residential development, the required findings for conditional use permits and minor conditional use permits are:

1. That the proposed use is in accord with the General Plan, the objectives of the zoning ordinance, and the purposes of the district in which the site is located.
2. That the proposed use, together with the conditions applicable thereto, will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
3. That the proposed use complies with each of the applicable provisions of the zoning ordinance.

7. PLANNING AND DEVELOPMENT FEES

Planning Fees

Housing construction imposes certain short- and long-term costs upon local government, such as the cost of providing planning services and inspections. In addition, long-term costs related to the maintenance and improvement of the community's infrastructure, facilities, parks, and streets are also imposed. Proposition 13 has severely constrained the amount of property tax revenue that a city in California receives. As a result, Santee charges various planning and development fees to recoup costs and ensure that essential services and infrastructure are available when needed. Santee is sensitive to the issue that excessive fees may hinder development and strives to encourage responsible and affordable development.

In 2020, the City Council adopted a new fee schedule, which reflects minor upward adjustments for some fees (Table 32). Permit and development fees for Santee and neighboring jurisdictions are summarized in Table 33.

Table 32: Residential Development Fees

Permit Issuance Fee	Single-family development (SFD)	Multifamily (townhome)	Multifamily (250 units in 1 building)	Apartment (assume 25 units/bldg.)
Permit Fees				
Building Permit Average Total	$6,864	$5,831	$3,327	$2,514
Plan Check Fee[1]	$3,432	$2,915	$1,663	$1,257
Base Fee	$5,002	$3,159	$2,061	$882
Misc. Additions[2]	$1,786	$2,611	$1,220	$1,620
SB1473	$8	$5	$21	$4
SMIP	$26	$15	$14	$14
Permit Issuance Fee	$42	$41	$11	$4
Impact/Capacity Fees				
Sewer (Padre Dam)	$15,876	$12,987	$12,987	$10,589
Water (Padre Dam)	$22,930	$21,210	$21,210	$18,917
Public Facilities	$6,923	$6,243	$6,243	$6,243
Traffic	$3,808	$2,435	$2,435	$2,435
Traffic Signal	$402	$252	$252	$252
Parks	$8,334	$7,598	$7,598	$7,598
Drainage/Flood	$3,093	$2,115	$2,115	$2,115

Table 32: Residential Development Fees				
Permit Issuance Fee	**Single-family development (SFD)**	**Multifamily (townhome)**	**Multifamily (250 units in 1 building)**	**Apartment (assume 25 units/bldg.)**
School[3]	$7,328	$6,412	$5,496	$4,580
Traffic SANDAG (RTCIP)	$2,583.82	$2,583.82	$2,583.82	$2,583.82
Total	$78,142	$67,667	$64,247	$57,827

Notes:
1. Plan check fee is ½ of the building permit fee
2. Includes mechanical, electrical, plumbing fees and fees for additions such as garages and balconies.
3. Santee Elementary School District 2021 Developer Fee is $3.38/sq. ft.; Grossmont Union High School District 2021 Developer Fee is $1.20/sq. ft. – Calculations based on typical 1,600 sq. ft. single-family home, 1,400 sq. ft. townhome, 1,200 sq. ft condo unit, and 1,000 sq. ft. apartment unit.

Source: City of Santee Fee Schedule FY2020-21; Padre Dam Municipal Water District Sewer and Water Capacity Fee Schedule 2021; Santee Elementary School District Developer Fees 2021; Grossmont Union High School District Developer Fees 2021

Table 33: Fee Comparisons (2019-2020)				
Jurisdictions	**Per Unit Permit and Impact Fees**			
	Single Family	**Townhome (Type V Construction)**	**Condominium (Type III Construction)**	**Apartment (Type V Construction)**
Carlsbad	$42,616.78	$23,012.02	$17,086.21	$16,762.04
Chula Vista	$57,167.97	$42,481.32	$38,577.18	$38,596.86
Encinitas	$22,932.15	$15,984.48	---	$15,233.65
Escondido	$37,044.15	$31,185.86	$29,360.35	$29,360.35
Imperial Beach	$15,161.22	$11,262.71	$9,832.14	$21,010.37
La Mesa	$27,442.49	$19,242.63	$14,248.72	$12,906.75
Lemon Grove	$13,563.65	$6,259.63	$4,870.52	$5,106.55
National City	$15,025.99	$5,655.93	$4,175.54	$4,175.54
Oceanside	$68,235.30	$25,089.74	$17,254.33	$17,178.01
Poway	$26,528.05	$21,194.22	$2,059.13	$20,898.17
San Diego	$155,367.00	$103,121.73	$95,731.81	$97,461.70
San Marcos	$30,761.34	$25,588.10	$23,410.80	$14,184.14
Santee	**$32,008.00**	**$27,058.00**	**$24,554.00**	**$23,741.00**
San Diego County	$21,797.00	$12,793.00	$10,900.00	$11,156.00
Vista	$27,546.37	$20,804.79	$23,176.90	$18,608.86

Source: BIA 2019-2020 Fees Study for San Diego County; City of Santee Fee Schedule FY2020-21; Padre Dam Municipal Water District Sewer and Water Capacity Fee Schedule 2021; Santee Elementary School District Developer Fees 2021; Grossmont Union High School District Developer Fees 2021

8. ON- AND OFF-SITE IMPROVEMENTS

Another factor adding to the cost of new construction is the provision of adequate infrastructure to support municipal services for new resident development. In many cases, these improvements are dedicated to the City, which is then responsible for their maintenance. The cost of these facilities is borne by developers, added to the cost of new housing units, and eventually passed in various degrees to the property owner or homebuyer.

Santee has one sizeable undeveloped areas for which new development is planned: Fanita Ranch in the northern portion of the city. On-and off-site infrastructure improvements/requirements are assessed based on the merits of each project during discretionary project review, and for larger projects may be determined through the environmental review process. Typically, the following are required for new construction and new subdivisions:

- Install city standard sidewalk, curb and gutter.
- Install reclaimed water system for landscaping irrigation.
- Install storm water retention system for on-site storm water management.

For new homes within existing neighborhoods, the following are typically required:

- Install storm water retention system.
- Repair sidewalk, curb and gutter if damaged or unsafe. If repair is necessary, the applicable fee for curb/gutter or sidewalk encroachment permit would apply.

9. BUILDING CODES AND ENFORCEMENT

Building and safety codes, while adopted to preserve public health and safety ensure the construction of safe and decent housing, have the potential to increase construction costs and impact the affordability of housing. These include the following building codes, accessibility standards, and other related ordinances.

California Building Code

The City of Santee adopted the California Building Code (CBC) which includes the International Building Code. The City adopted the CBC with minor administrative changes and one amendment related to minimum roof covering classifications for increased fire protection. The fire-related amendment applies uniformly to all construction types throughout the City and is intended to enhance public health and safety. Although this amendment to the CBC may result in an increase in the cost of construction, such cost increase is minor relative to the overall cost of construction. Furthermore, developers have not indicated that the amended roof covering classifications constrain or otherwise limit development opportunities in Santee. Enforcement of applicable building codes requires inspections at various stages of construction to ensure code compliance. The CBC prescribes minimum insulation requirements to reduce noise and promote energy efficiency.

Americans with Disabilities Act (ADA)

The City's building code requires new residential construction to comply with ADA requirements. State law requires new residential construction to comply with ADA requirements. State law requires buildings consisting of three or more units to incorporate design features, including: 1) adaptive design features for the interior of the unit; 2) accessible public and common use portions; and 3) sufficiently wider doors to allow wheelchair access. These codes apply to all jurisdictions and are enforced by federal and state agencies.

National Pollutant Discharge Elimination System

As the permit holder of a Municipal Storm Water Permit, the City must implement an Urban Runoff Management Program to reduce the discharge of pollutants into the storm sewer system. Prior to issuance of a building permit of any discretionary land use approval or permit, the applicant must submit a storm water mitigation plan and implement Best Management Practices in accordance with state and local regulations.

Code Enforcement

The City's Department of Development Services and Code Enforcement staff is responsible for enforcing local and state property maintenance codes. Inspections of unsafe buildings are made on a complaint or referral basis. The City of Santee actively pursues reported code violations in the City.

Substandard housing conditions within the City's existing housing stock are abated primarily through code compliance. Identification of code violations is based on resident complaints. The City then advises property owners on proper corrective action. The City has also adopted the Uniform Code for the Abatement of Dangerous Buildings to require the repair or removal of any structure deemed a threat to public health and safety.

Section 4: Housing Resources

This section summarizes the resources available for the development, rehabilitation, and preservation of housing in Santee. The analysis includes an evaluation of the adequacy of the City's land inventory to accommodate Santee's regional housing needs goals for the 2021-2029 planning period. Financial resources available to support housing activities and the administrative resources available to assist in implementing the City's housing programs are also analyzed in this section.

A. Available Sites for Housing

State law requires communities to play an active role in ensuring that enough housing is available to meet expected population growth in the San Diego region. Periodically as set forth by State statutory timeframe, the San Diego Association of Governments (SANDAG) is authorized to set forth specific goals for the amount of new housing that should be planned for in each jurisdiction over a specified time period, in this case June 30, 2020 through April 15, 2029. This section discusses how Santee will plan for the provision of housing for all economic segments by 2020.

1. FUTURE HOUSING NEED

SANDAG developed a Regional Housing Needs Assessment (RHNA) based on the California Department of Housing and Community Development (HCD) determination for the region's "fair share" of statewide forecasted growth through April 15, 2029. Overall, the region needs to plan for an additional 171,685 units. Santee's share of the regional housing need for the 2021-2029 RHNA period is allocated by SANDAG based on a number of factors, including recent growth trends, income distribution, and capacity for future growth.

Santee was assigned a future housing need of 1,219 units for the 2021-2029 RHNA period, representing 0.7 percent of the total regional housing need. Of the 1,219 units allocated to Santee, the City must plan for units affordable to all income levels, specifically: 203 extremely low income, 203 very low income, 200 low income, 188 moderate income, and 425 above-moderate income units.[4]

[4] The City has a RHNA allocation of 406 very low income units (inclusive of extremely low income units). Pursuant to State law (AB 2634), the City must project the number of extremely low income housing needs based on Census income distribution or assume 50 percent of the very low income units as extremely low. Assuming an even split, the City's RHNA allocation of 406 very low income units may be divided into 203 very low and 203 extremely low income units. However, for purposes of identifying adequate sites for the RHNA allocation, State law does not mandate the separate accounting for the extremely low income category.

Table 34: RHNA Housing Needs for 2021-2029		
Income Category (% of County AMI)	**Number of Units**	**Percent**
Extremely Low (30% or less)	203	16.7%
Very Low (31-50%)	203	16.7%
Low (51-80% AMI)	200	16.4%
Moderate (81%-120% AMI)	188	15.4%
Above Moderate (>120% AMI)	425	34.9%
Total	1,219	100.0%

Source: Final Regional Housing Needs Allocation, SANDAG, August 2020.
AMI = Area Median Income
Note: The City has a RHNA allocation of 406 very low income units (inclusive of extremely low income units. Pursuant to State law (AB 2634), the City must project the number of extremely low income housing needs based on Census income distribution or assume 50 percent of the very low income units as extremely low. Assuming an even split, the City's RHNA allocation of 406 very low income units may be divided into 203 very low and 203 extremely low income units. However, for purposes of identifying adequate sites for the RHNA allocation, State law does not mandate the separate accounting for the extremely low income category

2. CREDITS TOWARDS THE RHNA

Since the RHNA uses June 30, 2020 as the baseline for growth projections for the Housing Element planning period, jurisdictions may count the number of new units issued building permits or certificates of occupancy since June 30, 2020 toward their RHNA. This section describes the applicability of the rehabilitation and new construction credits, while latter sections discuss the availability of land to address the remaining RHNA. Table 35 summarizes Santee's RHNA credits and the remaining housing need through April 15, 2029. With the anticipated ADUs, entitled projects, projects under review, and Fanita Ranch, the City has adequate capacity to accommodate its moderate and above moderate income RHNA. The City must accommodate the remaining RHNA of 605 lower income units with vacant and nonvacant sites that are appropriately zoned and have near-term development potential.

Table 35: RHNA Credits and Remaining Need						
Income Category (% of County AMI)	**RHNA**	**Potential ADU**	**Entitled**	**Under Review**	**Fanita Ranch**	**Remaining Need**
Extremely Low/Very Low (<50% AMI)	406	0	0	1	0	405
Low (51-80% AMI)	200	0	0	0	0	200
Moderate (81%-120% AMI)	188	80	0	0	435	0
Above Moderate (>120% AMI)	425	0	128	435	2,514	0
Total	1,219	80	128	436	2,949	605

Potential ADU

New State laws passed since 2017 have substantially relaxed the development standards and procedures for the construction of Accessory Dwelling Units (ADUs). However, the City has seen slight increases in ADUs in the community, with only one unit permitted in 2018, four units in 2019, and 14 units in 2020. While this trend yielded an annual average of nine units per year between 2018 and 2020, the City Council adopted a policy to waive development impact fees for ADUs for five years effective September 2019. This incentive resulted in a significant increase in ADU activities

(more than tripled between 2019 and 2020). Therefore, the City anticipates permitting at least 80 ADUs in the eight-year planning period between 2021 and 2029. Given the lack of housing affordability data available, the City expects that all new ADUs to be affordable to moderate income households.

Active Entitlements

As of July 1, 2020, the City entitled a total of 138 housing units, including condominiums and single-family homes. As with units under review, new construction condominiums and single-family homes are considered affordable only to above moderate-income households.

Under review

As of July 1, 2020, a total of 436 units were at various stages of review and approval. All units were considered affordable only to above moderate households, with the exception of one very low income unit in the Atlas View Drive project in exchange for a density bonus.

Table 36: Projects Under Review

Project	Type	Total Units
Carlton Oaks Golf Course	SFH/Condo	285
Atlas View Drive	Condo	12
Mast Blvd	Condo	125
Tyler Street	SFH	14
Total Units		436

Fanita Ranch

On September 23, 2020, City Council approved the Fanita Ranch project.[5] Fanita Ranch will be a master planned community consisting of up to 2,949 units with a school, or 3,008 units without a school. As part of the Fanita Ranch project approval, the General Plan land use designation of the site was amended from PD (Planned Development), R-1 (Low Density Residential) and HL (Hillside/Limited Residential) to SP (Specific Plan) and the Fanita Ranch Specific Plan was adopted.

Development will be distributed into three villages named according to their designed theme: Fanita Commons, Vineyard Village, and Orchard Village. Table 37 shows the permitted uses and development regulations for each proposed land use designation and village as established by the Fanita Ranch Specific Plan.

- **Village Center** land use designation would apply to approximately 36.5 acres of the project site and would allow development of approximately 435 residential units. It would allow for a mix of residential, commercial (retail, service, and office), civic, and recreational uses in a

[5] The project approval included approval of Resolution 094-2020, which adopted the General Plan Amendment (GPA 2017-2) that is necessary for the development Fanita Ranch project. On October 29,2020, a referendum against Resolution 094-2020 was submitted to the City Clerk's office. On January 13, 2021, the referendum petition was certified as including the required number of signatures, and the City Council voted to place the referendum on the November 2022 ballot. Due to the referendum, the effective date of Resolution 094-2020 is suspended, which means that the developer cannot move forward with actual construction of the Fanita Ranch project until the referendum is resolved.

walkable mixed-use configuration with a maximum building height of 55 feet. When uses are mixed, they may be combined horizontally (side by side or adjacent to one another) or vertically (residential, office above retail, or combination of both).

- **Medium Density Residential** land use designation would apply to approximately 67 acres of the project site and would allow development of approximately 866 residential units. It would establish areas for residential uses in a variety of attached, detached, and semi-detached building typologies at densities ranging from 8 to 25 residential units per acre.

- **Low Density Residential** land use designation would apply to approximately 240.8 acres of the project site and would allow development of approximately 1,203 residential units. Building types would include single-family detached residences, detached cluster residences, and community buildings (buildings that would serve as landmarks such as churches), with a maximum building height of 45 feet.

- **Active Adult** land use designation would apply to approximately 31 acres within Fanita Commons and would allow development of approximately 445 residential units. It would establish areas for age-restricted residential uses in a variety of building types with densities ranging from 5 to 25 residential units per acre and a maximum building height of 55 feet. Building types would include single-family detached residences, detached cluster residences, attached/semi-detached residences, and community buildings with a maximum building height of 55 feet.

Table 37: Fanita Ranch Land Use Summary*

	Fanita Commons	Orchard Village	Vineyard Village	Total
Village Center (up to 50 du/ac)	323	33	79	435
Medium Density (8-25 du/ac)	0	368	498	866
Low Density Residential (4-10 du/ac)	0	454	749	1,203
Active Adult Residential (5-25 du/ac)	445	0	0	445
Total	768	855	1,326	2,949

Source: Fanita Ranch Project Draft Revised EIR, May 2020. *"With School" Scenario

Units in the Village Center are considered feasible for housing affordable to moderate income households due to the high density allowed of up to 50 du/acre. All other units are considered affordable only to above moderate-income households.

The conceptual phasing plan for the project will be divided into four phases The plan's objective is to coordinate the provision of public facilities and services with the anticipated sequence pattern of development. The phasing of development and implementation of public facilities may be modified as long as the required public improvements are provided at the time of need. The conceptual phases for the proposed project include the following:

- Phase 1: Fanita Commons and the easterly portion of Orchard Village, off-site and on-site improvements to Fanita Parkway and Cuyamaca Street, sewer infrastructure through the Phase 2 area, and water infrastructure in the Special Use area.
- Phase 2: Westerly portion of Orchard Village and dead-end street improvements.
- Phase 3: Connections to and construction of the southerly half of Vineyard Village and water infrastructure through the Phase 4 area, and off-site improvements to Magnolia Avenue.
- Phase 4: Northerly half of Vineyard Village.

Each phase would take approximately 2 to 4 years to complete. Once construction begins, build-out of the project is anticipated within 10 to 15 years. Fanita Commons, which includes the majority of the Village Center high density residential use, is planned for Phase 1 of development.

3. RESIDENTIAL SITES INVENTORY

Because the RHNA period extends from June 30, 2020 to April 15, 2029, a jurisdiction may meet the RHNA requirement using potential development on suitable vacant and/or nonvacant sites within the community. A jurisdiction must document how zoning and development standards on the sites facilitate housing to accommodate the remaining RHNA identified in Table 35 on page 65. Santee currently has adequate land capacity to meet the needs of all income groups. The following Table 38 is a summary of the detailed parcel data included in **Appendix C, Sites Inventory**.

Sites are suitable for residential development if zoned appropriately and available for residential use during the planning period. In order to accommodate the RHNA for each income category, the City identified some sites for rezoning to be included in the Housing Element implementation program. **Appendix C, Sites Inventory,** shows the sites that will be rezoned to accommodate RHNA. Of the 37 sites identified in the inventory, 28 are being rezoned to accommodate RNHA. Most sites are proposed to be upzoned, with the exception of three sites in the Town Center Residential area, which are to be downzoned to be consistent with the surrounding residential development

Table 38: Residential Sites Inventory (Summary)						
Affordability Level and Zoning	**Density Factor**	**Site Count**	**Acreage**	**Average Parcel Size**	**Capacity**	**Status**
Lower Income						
R-22 (22-30 dua)	22 dua	5	15.53	3.11	297	Nonvacant
R-30 (30-36 dua)	30 dua	1	1.96	1.96	58	Vacant
TC-R-22 (22 dua)	22 dua	2	10.60	5.30	233	Nonvacant
		1	5.26	5.26	115	Vacant
TC-R-30 (30 dua)	30 dua	1	10.00	10.0	300	Nonvacant
		1	11.11	11.11	333	Vacant
Low Income Subtotal		11	54.46	4.95	1,336	
Moderate Income						
R-14 (14-22 dua)	14 dua	2	4.17	2.09	58	Nonvacant
TC-R-14 (22 dua)	14 dua	4	44.82	11.21	529	Vacant
Moderate Income Subtotal		6	48.99	8.16	587	
Above Moderate Income						
R-7 (7-14 dua)	7 dua	15	27.28	1.82	165	Nonvacant
	7 dua	4	3.96	0.99	25	Vacant
POS/R-7 (7-14 dua)	7 dua	1	47.45	47.45	122	Vacant
Above Moderate Income Subtotal		20	78.69	3.93	312	
Total		**37**	**182.14**	**4.92**	**2,235**	

Residential uses proposed on sites counted toward meeting Santee's RHNA for very low, low, moderate, and/or moderate income needs shall be approved if developed in accordance with the applicable development standards of the Municipal Code. The Development Review process (Section 3) will be used to ensure that subdivisions and/or multifamily projects on these sites comply with development regulations and design requirements, but shall not be used to deny a permit for residential development based on the use itself.

Realistic Capacity Assumptions

Most residential zone districts in Santee establish a range of allowable density. For example, density within the R-14 zone may range between 14 and 22 dwelling units per acre (dua) and between 22 and 30 dua is allowed within the R-22 zone. For purposes of calculating the realistic capacity of sites in **Appendix C, Sites Inventory**, the minimum of allowable density was used in these districts. This is considered a highly conservative assumption as development projects proposed in Santee's multifamily districts (R-7, R-14, and R-22) have historically been approved at the upper end of the allowable density. The TC-R-14, TC-R-22 and TC-R-30 districts within the Town Center Specific Plan (TCSP) do not have an allowable density range; development within these districts must meet the established density (14, 22, and 30 dua, respectively). Therefore, the TCSP density threshold was used for sites in these districts.

Affordability, Suitability, and Availability Analysis

This subsection describes the assumptions applied to each parcel in **Appendix C, Sites Inventory**, to determine affordability level and establish the suitability and availability for development within the planning period. When determining which sites are best suited to accommodate lower income

RHNA, the City also considered proximity to transit, access to amenities such as parks and services, locational scoring criteria for Low-Income Housing Tax Credit (TCAC) Program funding, and proximity to available infrastructure and utilities in addition to "default" density.

Government Code Section 65583.2(c)(3)(B) allows local governments to utilize a "default" numerical density standard for establishing adequate zoning to accommodate lower income housing. The City's four R-22, R-30, TC-R-22, and TC-R-30 zones have density ranges that include the default density of 30 dua, can accommodate an estimated 1,336 lower income units.

The housing market analysis in the Community Profile of this Housing Element demonstrates that moderate income households can afford to a wide range of rental options and purchase some of the condos in Santee. As such, the City assumes that sites in R-14 and TC-R-14 (density ranges 14-22 dua) zones can accommodate 587 moderate income units. The least dense sites (and R-7) sites can facilitate 312 above moderate income units.

Suitability of Nonvacant Sites

Vacant sites cannot accommodate Santee's entire share of the regional housing need and the City relies on underutilized properties to demonstrate sufficient capacity during the planning period. This section demonstrates that the underutilized sites are suitable for redevelopment within the planning period.

All the sites identified include marginal uses such as underused commercial uses or marginal operations and small homes on large lots. All of the existing structures were built before 1990 and are over 30 years old and 65 percent of structures are over 70 years old. Structures that are in fair condition are on lots that are highly underutilized based on the allowable zoning. Figure 10 depicts typical existing conditions on underutilized sites in the commercial and residential zones. Details for each site selected for the RHNA are provided in **Appendix C, Sites Inventory**.

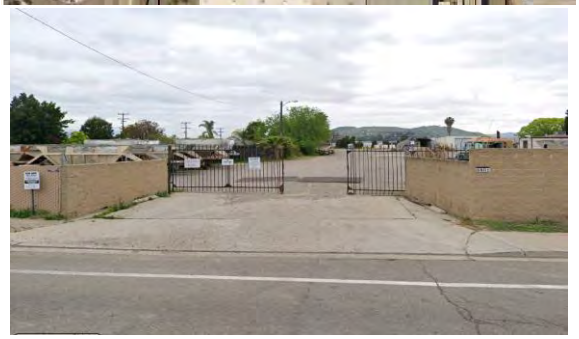
Feasibility for Development

The City considered potential sites mostly between 0.5 to 10 acres and minimally constrained by topography, airport safety zones, wildlands, infrastructure, hydrology. The City identified two potential opportunity zones: Summit Avenue (10 sites) and Town Center (nine sites) along with other infill lots scattered throughout the City.

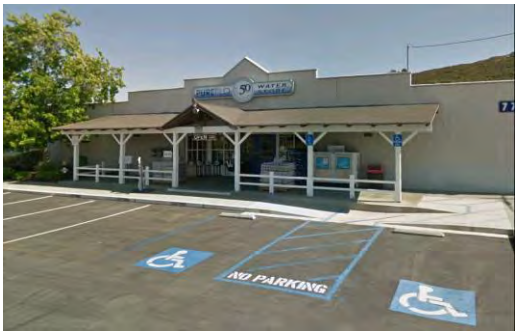
- Summit Ave sites are larger, relatively flat parcels possibly for small lot subdivisions in the 7 to 14 units per acre range. With potential lot sizes of about 4,000 sq. ft., these lots would be consistent with Santee's past development patterns.
- Town Center sites are large, flat vacant parcels near transit that could support higher densities and mixed-uses.

Six of the 37 sites identified have property owner support and interest in developing at the higher density allowed following the rezoning of the properties. Four of these sites with owner interest have been identified for accommodating lower income households. Two of the properties have had proposals for workforce housing. In addition, nine of the 11 sites identified for lower income housing are considered competitive for affordable housing funding since they are located in areas of high resources according to the 2021 TCAC/HCD Opportunity Area Maps.

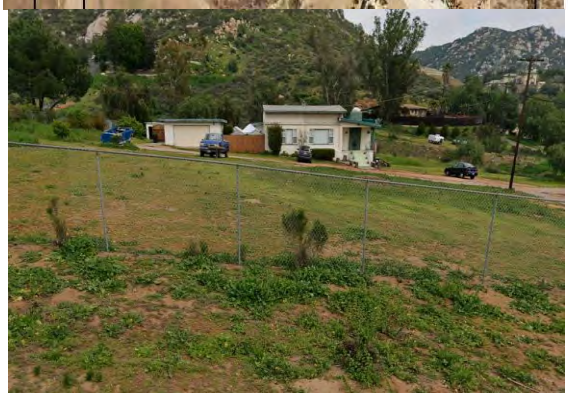
Figure 10: Typical Existing Conditions of Underutilized Sites



Site 25: Underutilized commercial site (trucking) to be rezoned to R-14; adjacent to single-family homes.



Site 29: Underutilized commercial site to be rezoned to R-22 with an application for the back parcel to build 88 townhouses. Commercial space in front parcel vacant as of November 2020.



Site 4: Underutilized residential site to be rezoned to R-7 with single-family homw built in 1940.

Site 33: Underutilized residential parcel with single-family home built in 1958. Site is adjacent to another underutilized site with single-family home built in 1954

4. INFRASTRUCTURE AVAILABILITY

No significant public service or infrastructure constraints have been identified in the City. Public infrastructure improvements required of new developments, impact fees, and planned city improvements of facilities help ensure that services and facilities are available to both current and future residents. Parks, schools, emergency services facilities, and other public facilities are also extended in this manner. All vacant and nonvacant sites identified in **Appendix C, Sites Inventory**, as suitable for lower and moderate income households can be readily served by existing infrastructure and services. Substantial new infrastructure would need to be built to serve the Fanita Ranch property; however, provision for infrastructure required to serve future development on the property is assured by conditions of project approval.

5. ADEQUACY OF SITES TO MEET REGIONAL FAIR SHARE ALLOCATION

Table 39 summarizes the City's accommodation of the RHNA for all income groups during the planning period. After accounting for development credits and the realistic capacity of vacant and nonvacant sites, the City has identified adequate capacity for its RHNA for the planning period.

Table 39: Adequacy of Sites to Accommodate RHNA

Income Level	RHNA	Credits	Remaining RHNA	Sites Inventory Capacity	Surplus
Very Low (<50% AMI)	406	1	405	1,336	+731
Low (51-80% AMI)	200	0	200		
Lower income (<80% AMI)	606	1	605	1,336	+731
Moderate (81%-120% AMI)	188	515	0	587	+914
Above Moderate (>120% AMI)	425	3,077	0	312	+2,964
Total	**1,219**	**3,593**	**605**	**2,235**	**+4,609**

B. Financial Resources

The City of Santee has access to several federal and local resources to achieve its housing and community development goals. Specific funding sources will be utilized based on the eligibility and requirements of each project or program. The City leverages, to the maximum extent feasible, local funds with federal and State funds in meeting its housing and community development objectives.

1. SB2 GRANTS

In 2017, Governor Brown signed a 15-bill housing package aimed at addressing the State's housing shortage and high housing costs. Specifically, it included the Building Homes and Jobs Act (SB 2, 2017), which establishes a $75 recording fee on real estate documents to increase the supply of affordable homes in California. Because the number of real estate transactions recorded in each county will vary from year to year, the revenues collected will fluctuate.

The first year of SB 2 funds are available as planning grants to local jurisdictions. The City of Santee received $160,0000 for planning efforts to facilitate housing production. The funds were applied

toward the purchase and implementation of a state-of-the-art permitting system that streamlines plan submittal and review process and accelerate housing production. For the second year and onward, 70 percent of the funding will be allocated to local governments for affordable housing purposes. A large portion of year two allocations will be distributed using the same formula used to allocate federal Community Development Block Grants (CDBG). HCD is in the process of closing out the Year One planning grant allocations and has not begun the process of allocating the Year Two affordable housing funds.

2. COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

The CDBG Program is administered by HUD. Through this program, the federal government provides monies to cities to undertake certain kinds of community development and housing activities.

Activities proposed by the City must meet the objectives and eligibility criteria of CDBG legislation. The primary CDBG objective is the development of viable urban communities, including decent housing and a suitable living environment, and expanding economic opportunity, principally for persons of lower income (<80 percent AMI). Each activity must meet one of the three broad national objectives of:

- Benefit to lower income families
- Aid in the prevention of elimination of slums or blight
- Meet other community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community

Santee's CDBG funding allocation has declined steadily in recent years. The City's FY 2020 allocation is approximately $275,000. A portion of these funds are frequently used to assist non-profit organizations that support affordable housing opportunities to low income households.

3. HOME INVESTMENT PARTNERSHIP ACT (HOME)

The HOME program provides federal funds for the development and rehabilitation of affordable rental and ownership housing for lower income households (<80 percent of AMI). The program gives local governments the flexibility to fund a wide range of affordable housing activities through housing partnerships with private industry and non-profit organizations. HOME funds can be used for activities that promote affordable rental housing and homeownership by low income households, including:

- Building acquisition
- New construction and reconstruction
- Moderate or substantial rehabilitation
- Homebuyer assistance
- Rental Assistance

Strict requirements govern the use of HOME funds. Two major requirements are that the funds must be: 1) used for activities that target lower income families; and 2) matched 25 percent by non-federal funding sources.

The City does not receive HOME funds directly, but participates in the HOME Consortium, which is operated by the County of San Diego. In the past, Santee secured approximately $170,000 per annum in dedicated HOME resources to foster homeownership support for income eligible households. While these resources remain available through the San Diego County HOME Consortia, they are distributed competitively through the HOME Downpayment and Closing Costs Assistance Program and the HOME Housing Development Program and the level of resource availability to the City is not definite.

4. HOUSING CHOICE VOUCHER ASSISTANCE

In the course of the Housing Element cycle, the City has participated in the Housing Choice Voucher program, which extends rental subsidies to very low income (up to 50 percent of AMI) family and seniors who spend more than 30 percent of their income on rent. The subsidy represents the difference between the excess of 30 percent of the monthly income and the actual rent. Rental assistance is issued to the recipients as vouchers, which permit tenants to locate their own housing and rent units beyond the federally determined fair market rent in an area, provided the tenants pay the extra rent increment. The City of Santee contracts with the San Diego County Housing Authority to administer the Housing Choice Voucher (HCV) Program.

C. Administrative Resources

A variety of public and private sector organizations have been involved in housing and community development activities in Santee. These agencies are involved in the improvement of the housing stock, expansion of affordable housing opportunities, preservation of existing affordable housing, and/or provision of housing assistance to households in need.

1. CITY OF SANTEE DEPARTMENT OF DEVELOPMENT SERVICES

The Department of Development provides housing and community development services to residents, developers, and others interested in housing issues. The Division is responsible for the development of the City's HUD Consolidated Five-Year and Annual Action Plans for the expenditure of Community Planning and Development (CPD) funds, including CDBG and HOME. The Department is also responsible for ensuring the implementation of the City's housing programs.

2. SAN DIEGO COUNTY HOUSING AUTHORITY

The San Diego County Housing Authority coordinates and administers Housing Choice Voucher Program rental assistance on behalf of the City of Santee. About 300 Santee households are receiving HCV assistance with more than 1,700 households on the wait list for assistance.

3. NONPROFIT ORGANIZATIONS

The City of Santee works with a number of nonprofit organizations to provide affordable housing and supportive services to residents in need. These include, but are not limited to, the following organizations.

Crisis House

Crisis House provides case homeless prevention and intervention services to meet the immediate needs of the homeless and near-homeless in Santee. Immediate need includes the provision of food, temporary shelter, case management, referrals, and other social services. The City has provided CDBG funds for this program in recent years.

Center for Social Advocacy

The Center for Social Advocacy promotes housing opportunities for all persons regardless of their special characteristics. The Center also provides tenant/landlord mediation services. The City has provided CDBG funds for this program in recent years for fair housing services.

Santee Ministerial Council

The Santee Ministerial Council operates the Santee Food Bank, which provides emergency food supplies and assistance for needy extremely low income individuals and households, including the homeless. The City has provided CDBG funds for this program in recent years.

Elderhelp of San Diego

Elderhelp of San Diego provides case management and services through a trained social worker to help seniors remain in their homes by providing referrals and information. The City has provided CDBG funds for these services in recent years.

Meals on Wheels Greater San Diego

Meals on Wheels supports the independence and well-being of seniors and persons with specials needs by providing meals to homebound participants of the Meals of Wheels Program. The City has provided CDBG funds for this program in recent years.

Voices for Children

Voices for recruits, trains, and supports Court Appointed Special Advocate (CASA) volunteers who speak up for the needs and well-being of children in foster care. The City has provided CDBG funds to provide foster children with CASAs.

D. Energy Conservation Opportunities

This section provides an overview of opportunities for energy conservation during the housing planning period.

1. CITY OF SANTEE INITIATIVES

In December 2019, the City adopted the Sustainable Santee Plan, the City's Climate Action Plan. The Sustainable Santee Plan is the City of Santee's plan for reducing greenhouse gas ("GHG") emissions to conform to State GHG emission reduction targets. The City of Santee (City) is committed to providing a more livable, equitable, and economically vibrant community through the incorporation of energy efficiency features and reduction of greenhouse gas (GHG) emissions. Through the Sustainable Santee Plan, the City has established goals and policies that incorporate environmental responsibility into its daily management of its community and municipal operations. In addition, the City will continue strict enforcement of local and state energy regulations for new residential construction, and continue providing residents with information on energy efficiency. Specifically, the City encourages the use of energy conservation devices such as low flush toilets and weatherization improvements in new development. The City also promotes design concepts that utilize technological advances in the application of alternative energy sources which make the use of the natural climate to increase energy efficiency and reduce housing costs.

2. PRIVATE SECTOR PROGRAMS

The following private sector energy conservation programs are available to housing developers and Santee residents:

- **California Alternative Rates for Energy (CARE):** Lower-income customers enrolled in the CARE program receive a 20 percent discount on their electric and natural gas bills and are not billed in higher rate tiers that were created for San Diego Gas & Electric (SDG&E). CARE is funded through a rate surcharge paid by all other utility customers.

- **Family Electric Rate Assistance Program (FERA):** This program was developed for families whose household income slightly exceeds the threshold for assistance in other energy program allowances. Qualifying households have some of their electricity usage billed at a lower rate.

- **Low Income Energy Efficiency Program (LIEE):** The LIEE program provides no-cost weatherization services to lower income households who meet the CARE guidelines. Services provided include attic insulation, energy efficient refrigerators, energy efficient furnaces, weather stripping, caulking, low-flow showerheads, water heater blankets, and door and building envelop repairs that reduce air infiltration.

- **Residential Energy Standards Training:** SDG&E offers seminars on energy efficiency compliance best practices. Architects, designers, builders, engineers, energy consultants, HVAC contractors, building department inspectors, and plan checkers are encouraged to

learn about new technologies that improve energy efficiency and reduce the cost of complying with evolving State energy standards.

- **Energy Savings Assistance Program**: SDG&E offers low- or no-cost products and installation of attic insulation, energy-efficient lighting, door weather-stripping, replacement of qualified appliances*, caulking, minor home repairs, water heater blankets, and low-flow showerheads to eligible residents through their Energy Savings Assistance Program.

- **Rebate Program:** SDG&E offers rebates for single-family and multifamily dwelling units for certain improvements in their units that lead to greater energy efficiency. These improvements include purchase and installation of insulation, energy efficient appliances, and the replacement of old light bulbs with Energy Star light bulbs.

Section 5: Housing Plan

This section of the Housing Element contains objectives, policies, and programs the City will implement to address a number of important housing-related issues and achieve the Santee's overarching housing goal, which states:

> *Ensure that decent, safe housing is available at a cost that is affordable to all current and future residents of this community. To this end, the City will strive to maintain a reasonable balance between rental and ownership housing opportunities and to encourage a variety of individual choices of tenure, type, and location of housing throughout the community.*

The section contains quantified (numerical) objectives for housing construction, rehabilitation, and the preservation of affordable housing, with a program of actions that:

- Provides regulatory concessions and incentives and uses local, state, and federal financing and subsidy programs to support the development and preservation of affordable housing.

- Identifies adequate sites with appropriate zoning, development standards, services and facilities to encourage the development of a variety of housing types for all income levels.

- Assists in the development of adequate housing to meet the needs of lower and moderate income households, including extremely low income households and those with special needs.

- Addresses and, where appropriate and legally possible, removes governmental constraints to the maintenance, improvement, and development of housing, including housing for all income levels and housing for persons with disabilities.

- Conserves and improves the condition of the existing affordable housing stock, which may include addressing ways to mitigate the loss of dwelling units demolished by public or private action.

- Promotes housing opportunities for all persons.

The Department of Development Services staff regularly reviews Housing Element programs, objectives, and progress towards accommodating the City's share of the regional housing need. An annual implementation report is prepared and provided to the City Council, California Office of Planning and Research, and California Department of Housing and Community Development.

A. Quantified Objectives

The City of Santee proposes the following objectives for the 2021-2029 Housing Element:

Table 40: Quantified Housing Objectives (2021-2029)

	RHNA[1]	New Construction[2]	Rehabi-litation	Conservation/ Preservation	Rental Assistance	Home Purchase Assistance	Other Assistance[3]
Extremely Low Income	203	51	24	133	100	0	785
Very Low Income	203	52	72		200	4	950
Low Income	200	50	384	90	0	12	350
Moderate Income	188	47	0	0	0	0	255
Above Moderate Income	425	669	0	0	0	0	0
Total	1,219	869	480	222	300	16	2,700

Notes:

1) Pursuant to AB 2634, the City must estimate the portion of the RHNA for very low income households that qualify as extremely low income. The City may use Census data to estimate the proportion of extremely low income households or to apply a 50 percent split. Assuming an even split, the City's RHNA allocation of 406 very low income units may be divided into 203 very low and 203 extremely low income units. For purposes of identifying adequate sites for the RHNA, however, no separate density threshold is established for extremely low income units.
2) Calculated based on the sum of 564 entitled or under review units and 25 percent of RHNA.
3) "Other Assistance" includes residents assisted through the Manufactured Home Fair Practices Program, Supportive Services, and Equal Housing Opportunity Services.

B. Objectives, Policies, and Programs

The objectives and policies contained in the Housing Element address Santee's housing needs and are implemented through a series of housing programs offered by the City. Housing programs define the specific actions the City will undertake to achieve the stated goals and policies. The objectives, policies, and programs are structured to address the following issue areas outlined the State law:

- Conserving and Improving the Condition of the Existing Housing Stock
- Assisting in the Development of Affordable Housing Opportunities
- Providing Adequate Sites to Achieve a Variety of Housing Types and Densities
- Removing Governmental Constraints as Applicable
- Affirmatively Furthering Fair Housing

1. CONSERVING AND IMPROVING THE EXISTING HOUSING STOCK

While most of Santee's housing stock is in good condition, a large proportion of the City's housing is nearing or has already exceeded 30 years of age, indicating the need for continued maintenance to prevent widespread housing deterioration. Other housing conservation needs of the City include existing affordable housing stock and rental units at-risk of converting to market-rents or condominiums, and the Housing Choice Voucher Program.

Objective 1.0: Conserve and improve the condition of the existing housing stock.

Policy 1.1: Advocate the rehabilitation of substandard residential properties by homeowners and property owners.

Policy 1.2: Offer a residential rehabilitation program that provides financial and technical assistance to lower income property owners to enable correction of housing deficiencies.

Policy 1.3: Focus rehabilitation assistance to create substantive neighborhood improvement and stimulate additional privately initiated improvement efforts.

Policy 1.4: Continue to utilize the City's code enforcement program to bring substandard units into compliance with City codes and to improve overall housing quality and neighborhood conditions in Santee.

Policy 1.5: Promote increased awareness among property owners and residents of the importance of property maintenance to long-term housing quality. Educate property owners regarding existing resources for residential rehabilitation.

Objective 2.0: Preserve existing affordable housing options in Santee.

Policy 2.1: Monitor the status of at-risk multi-family rental housing units, work with potential purchasers/managers as appropriate, and explore funding sources available to preserve the at-risk units.

Policy 2.2: Encourage the retention of existing, viable mobile home parks, which are economically and physically sound.

Policy 2.3: Regulate the conversion of existing multi-family rental properties to condominiums through application of Santee's Condominium Conversion Ordinance.

Policy 2.4: Continue to support rental assistance programs through the County.

Program 1: Mobile Home Assistance Program and Conversion Regulations

Administered through the State HCD, the Mobile Home Park Assistance Program (MPAP) provides financial and technical assistance to mobile home park residents who wish to purchase their mobile home parks and convert the parks to resident ownership. Loans are made to lower income mobile home park residents or to organizations formed by park residents to own and/or operate their mobile home parks, thereby allowing residents to control their housing costs. Loans are limited to 50 percent of the purchase prices plus the conversion costs of the mobile home park and are awarded by the State on a competitive basis. Applications must be made by mobile home park residents who must form a resident organization with the local public entity as a co-applicant.

The City will continue to advertise MPAP's availability to mobile home park residents and will serve as co-applicant for interested resident organizations. The City's Zoning Ordinance, through the Mobile Home Park Overlay District, provides for a 50 percent reduction in project application fees as an incentive for the conversion of existing rental parks to resident-owned parks. Also, when considering a Conditional Use Permit for conversion to a different use, the City Council shall ensure that applicants have satisfied the requirements of Sections 65863.7 ("Report of impact on conversion of mobile home park to another use") and 65863.8 ("Verification of notification by applicant for conversion of mobile home park to another use") of the California Government Code. These provisions assure that mobile home park occupants are afforded some protection if an existing facility is to be rezoned for another use.

Responsible Agency:	City of Santee Department of Development Services
Financing:	Mobile home conversion fees; Department budget
2021-2029 Objectives:	Circulate fliers to existing mobile home renter parks periodically. Co-sponsor MPAP applications as opportunity arises.
Timeframe:	Annual flier circulation and monitoring and annual monitoring and reporting throughout the planning period.

Program 2: Maintenance and Improvement of Existing Housing

Nearly 88 percent of the City's existing housing stock will exceed 30 years of age by the end of this Housing Element planning period (built before 2000). Continued maintenance will be essential to prevent widespread housing deterioration. In order to encourage maintenance and improvement of existing housing, the City will advertise available home improvement financing programs to residents on its website and public service counters. The City will also work to engage home improvement program representatives to provide an overview of such programs at least one public meeting before the City Council. Code compliance targeted at substandard and/or dilapidated housing will continue to be implemented, including exercising the use of court-appointed receiverships, as appropriate. The City will also make residents aware of basic home maintenance standards on its website.

Responsible Agency:	City of Santee Department of Development Services
Financing:	Department Budget
2021-2029 Objectives:	Ensure that Code Compliance addresses and resolves issues with severely substandard and/or dilapidated housing and that residents are aware of home maintenance standards and programs.

Timeframe: Ongoing implementation and annual monitoring and reporting throughout the planning period.

Program 3: Conservation of Existing and Future Affordable Units

Between 2021 and 2031, 222 units would be considered at risk of converting to market rate rents. Of these units, 47 are within the Cedar Creek Apartments, 43 within the Forester Square Apartments, and 132 in the Laurel Park Senior Apartments. The City will continue to monitor these at-risk units and should a notice of intent to convert to market rate be filed, work with potential purchasers to preserve the units, and ensure that tenants were properly notified of their rights under California law.

Responsible Agency: City of Santee Department of Development Services; U.S. Department of Housing and Urban Development (HUD); and San Diego County Housing Authority.

Financing: Section 8 vouchers, other funding sources as available

2013-2021 Objectives: Monitor the status of the 222 at-risk units at Cedar Creek Apartments, Forester Square Apartments, and Laurel Park Senior Apartments. The City of Santee will work with property owners, interest groups and the State and federal governments to implement the following programs on an ongoing basis to conserve its affordable housing stock:

- Monitor Units at Risk: Monitor the status of Cedar Creek Apartments, Forester Square Apartments, and Laurel Park Senior Apartments, since they may lose their subsidies due to discontinuation of the Section 8 program at the federal level or opting out by the property owner.
- Work with Potential Purchasers: Where feasible, provide technical assistance to public and non-profit agencies interested in purchasing and/or managing units at risk.
- Tenant Education: The California Legislature extended the noticing requirement of at-risk units opting out of low income use restrictions to one year. Should a property owner pursue conversion of the units to market rate, the City will ensure that tenants were properly noticed and informed of their rights and that they are eligible to receive Section 8 vouchers that would enable them to stay in their units.
- Assist Tenants of Existing Rent Restricted Units to Obtain Section 8 Voucher Assistance: Tenants of housing units with expired Section 8 contracts are eligible to receive special Section 8 vouchers that can be used only at the same property. The City will provide information to tenants of "at-risk" units to obtain these Section 8 vouchers through the San Diego County Housing Authority and refer tenants to the fair housing service provider(s) for resources and assistance.

Timeframe: Ongoing implementation and annual monitoring and reporting throughout the planning period. Within 60 days of notice of intent to convert at-risk units to market rate rents, the City will work with potential purchasers using HCD's current list of Qualified Entities[6], educate tenants of their rights, and assist tenants to obtain rental assistance in accordance with this program.

Program 4: Housing Choice Voucher Program

The Housing Choice Voucher Program extends rental subsidies to extremely low and very low income (up to 50 percent of AMI) families and seniors that spend more than 30 percent of their income on rent. The subsidy represents the difference between the excess of 30 percent of the monthly income and the actual rent. Rental assistance is provided to the recipients in the form of vouchers, which permit tenants to locate their own housing and rent units beyond the federally determined fair market rent in an area, provided the tenants pay the extra rent increment. Cities may contract with the San Diego County Housing Authority to administer the Housing Choice Voucher (HCV) Program. According to the Housing Authority, approximately 285 households received assistance through the program as of December 2019.

Responsible Agency: San Diego County Housing Authority
Financing: U.S. Department of Housing and Urban Development
2021-2029 Objectives: Continue to contract with the San Diego County Housing Authority to administer the Housing Choice Voucher (HCV) Program:

- Assist approximately 300 extremely low and very low income households annually during the planning period.
- Expand outreach and education on the recent State laws (SB 329 and SB 222) that support source of income protection for housing discrimination against low income households using public assistance (such as HCV) for rent payments.
- Promote the Housing Choice Vouchers program on City website.
- Support the County Housing Authority's applications for additional voucher allocations and efforts to maintain and expand voucher use in the City.

Timeframe: Ongoing implementation and annual monitoring throughout the planning period.

[6] List of current Qualified Entities is maintained and updated by HCD and is subject to change. - https://www.hcd.ca.gov/policy-research/preserving-existing-affordable-housing.shtml).

2. ASSISTING IN THE DEVELOPMENT OF AFFORDABLE HOUSING OPPORTUNITIES AND SUPPORTIVE SERVICES

New construction is a major source of housing for prospective homeowners and renters but generally requires public sector support for the creation of units affordable to lower income households, including extremely low income households. While a wide range of for-sale and rental housing options are available in Santee to above moderate and moderate income households, affordable options for lower income households are more limited (**Section 2, Community Profile**). Where there is a need for affordable housing, often there is also a need for supportive services for lower income households, including extremely low income households. The following Objectives, Policies, and Programs intend to address the overall need for affordable housing and supportive services in Santee.

Objective 3.0: Expand affordable housing options within Santee.

Policy 3.1: Develop and maintain collaborative efforts among nonprofits, for-profit developers, and public agencies to encourage the development, maintenance, and improvement of affordable housing.

Policy 3.2: Implement the City's Climate Action Plan. Promote design concepts that utilize technological advances in the application of alternative energy sources which make the use of the natural climate to increase energy efficiency and reduce housing costs.

Policy 3.3: Encourage the provision of housing affordable to extremely low income households when reviewing proposals for new affordable housing developments.

Objective 4.0: Provide housing support services to address the needs of the City of Santee's lower and moderate income residents, including extremely low income households and those with special needs.

Policy 4.1: Continue to support and coordinate with social service providers and regional agencies to address the housing related needs of Santee residents, particularly those with special needs.

Policy 4.2: Coordinate with local social service providers to address the needs of the City's homeless population. Provide funding to groups providing shelter and other services to the homeless.

Policy 4.3: Continue to participate in the Countywide homeless working group in preparing and implementing recommendations to the Board of Supervisors, the appointed bodies and municipalities regarding plans for providing emergency housing, Low Barrier Navigation Centers (LBNC), and homes with supervised care.

Program 5: Homebuyer Assistance Programs

With limited funding and rising home prices, the ability of the City to provide homebuyer assistance is limited. However, Santee residents are eligible to participate in several City, County, and State programs

First-Time Homebuyer Program: Through this program, the City assists Santee first-time lower and moderate income homebuyers with down payment and closing cost assistance. This assistance functions similar to a "silent second" to the assisted household's primary home loan application. This program is administered by the County of San Diego.

Down payment and Closing Cost Assistance Program (DCCA): DCCA offers low-interest deferred payment loans of up to 17 percent of the maximum allowable purchase price (adjusted annually) and a closing cost of four percent, not exceeding $10,000. DCCA loan funds may be used to pay down payment and closing costs of a qualifying single-family home, condominium, townhouse, or manufactured home on a permanent foundation. This program is offered by the County Housing and Community Development Services (County HCDS) but administered by the San Diego Housing Commission (SDHC)

Mortgage Credit Certificate (MCC) Program: Mortgage Credit Certificates (MCCs) are certificates issued to lower and moderate income first-time homebuyers authorizing the household to take a credit against federal income taxes of up to 20 percent of the annual mortgage interest paid. This program is administered by the California Housing Finance Agency (CalHFA).

Homebuyer's Down payment Assistance Program (CHDAP): CHDAP provides a deferred-payment junior loan, up to three percent of the purchase price, or appraised value, whichever is less, to be used for their down payment and/or closing costs. This program is administered by CalHFA.

Responsible Agency: City of Santee Department of Development Services, County HCDS, SDHC, CalHFA

Financing: HOME and other County and State funds

2021-2029 Objectives: Quantified objectives as follows:

- Assist 16 lower income households with downpayment and closing cost assistance during the planning period (four at <50 percent AMI and 12 at 51-80 percent AMI).
- County HCDS has a goal of assisting approximately 120 households with DCCA. This goal covers the entire Urban County program.
- Refer residents to the County HCDS and the California Housing Finance Agency for assistance.

Timeframe: Annual flier circulation and monitoring and reporting throughout the planning period.

Program 6: Manufactured Home Fair Practices Program

The City regulates short-term space leases in mobile home parks and provides staff support to the Manufactured Fair Practices Commission, which holds biannual meetings. The program requires significant financial resources in administration and legal defense of the Ordinance. Through the City Attorney's office, the City has defended or initiated many lawsuits to uphold the requirements of the Manufactured Home Rent Stabilization Program since 1998. To date, all of the City's efforts to maintain the rent control system have been successful. The City will continue to attend the biannual Manufactured Fair Practices Commission and promote its services to residents.

Responsible Agency:	City of Santee Department of Development Services
Financing:	Mobilehome Park Assessment Fees
2021-2029 Objectives:	Assist approximately 1,200 mobile home owners.
Timeframe:	Ongoing implementation and annual monitoring and reporting throughout the planning period. Promote the services of the Manufactured Home Fair Practices Commission.

Program 7: Facilitate Affordable Housing Development

With limited funding, the City will rely on the following non-funding-related actions to encourage affordable housing production during the planning period:

- Collaborate with Affordable Housing Developers: Affordable housing developers work to develop, conserve and promote rental and ownership affordable housing. Particularly in relation to senior citizen housing, the affordable housing developer is often, but not always, a local organization interested in developing affordable housing. The City will continue to collaborate with affordable housing developers to identify potential sites, write letters of support to help secure governmental and private-sector funding, and offer technical assistance related to the application of City incentive programs (e.g., density bonus).

- Regulatory Concessions and Incentives: The City will continue to work with developers on a case-by-case basis to provide regulatory concessions and incentives to assist them with the development of affordable and senior housing. In a relatively small city like Santee, this is the most effective method of assisting developers, as each individual project can be analyzed to determine which concessions and incentives would be the most beneficial to the project's feasibility. Regulatory concessions and incentives may include, but are not limited to, density bonuses beyond State requirements, required parking reductions, fee reductions or deferral, expedited permit processing, and modified or waived development standards, and optional onsite-amenities when within ¼ mile from public park or trail.

Responsible Agency:	City of Santee Department of Development Services
Financing:	Department budget
2021-2029 Objectives:	To facilitate affordable housing development:

- Maintain contact information for affordable housing developers for the purposes of soliciting their involvement in development projects in Santee.

- Participate with affordable housing developers to review available federal and State financing subsidies and apply as feasible on an annual basis.
- Review and revise the City's Density Bonus Ordinance in 2021 to ensure consistency with State law.
- Achieve the development of 200 units affordable to lower and moderate income households (estimated based on 25 percent of the RHNA, and representing an improvement over the 150 affordable units achieved during the 2013-2021 Housing Element planning period).

Timeframe: Update list and contact information for affordable housing developers annually. Provide ongoing participation and assistance to interested affordable housing developers. Annual monitoring and reporting throughout the planning period.

Program 8: Supportive Services

The City assists homeless and other service providers in meeting the immediate needs of persons with special needs, including the homeless or near-homeless in Santee. Immediate need includes the provision of food, temporary shelter, health care, and other social services.

Responsible Agency: City of Santee Department of Development Services
Financing: CDBG
2021-2029 Objectives: Assist 1,800 persons with temporary shelter and supportive services during the planning period (300 meals for lower income seniors, and temporary shelter, food, and clothing for 1,500 lower income individuals and families affected by domestic violence).
Timeframe: Annually review and allocate funds to service provider through the HUD Annual Plan process. Annual monitoring and reporting throughout the planning process.

3. PROVIDING ADEQUATE SITES TO ACHIEVE A VARIETY OF HOUSING TYPES AND DENSITIES

A key element in satisfying the housing needs of all segments of the community is the provision of adequate sites for housing of all types, sizes, and prices. This is an important function in both zoning and General Plan designations.

Objective 5.0 Encourage the provision of a wide range of housing by location, type of unit, and price to meet the existing and future needs of Santee residents to the maximum extent possible.

Policy 5.1: Provide a variety of residential development opportunities in the City, ranging in density from very low density estate homes to medium-high and high density development.

Policy 5.2: Encourage both the private and public sectors to produce or assist in the production of housing, with particular emphasis on housing affordable to lower income households, including extremely low income households, as well as housing suitable for the disabled, the elderly, large families, and female-headed households.

Policy 5.3: Require that housing constructed expressly for lower and moderate income households not be concentrated in any single area of Santee.

Policy 5.4: Encourage developments of new housing units designated for the elderly and disabled persons to be in close proximity to public transportation and community services.

Policy 5.5: Ensure that all new housing development and redevelopment in Santee is properly phased in amount and geographic location so that City services and facilities can accommodate that growth.

Policy 5.6: Ensure that sites in the Residential Sites Inventory are available during the planning period by overriding the Gillespie Field ALUCP as appropriate.

Program 9: Inventory of Available Sites and Monitoring No Net Loss

Santee has been allocated a RHNA of 1,219 units for the 2021-2029 planning period (406 very low income, 200 low income, 188 moderate income, and 425 above moderate income units). With units entitled and under review, as well as anticipated ADUs, the City has adequate capacity for its moderate and above moderate income RHNA, with a remaining lower income RHNA of 605 units. To accommodate the City's remaining RHNA for lower income units and to foster additional residential growth in the City, the City will rezone 168 acres (28 parcels) within one-year of the adoption of the Housing Element as follows:

Table 41: Rezoning for RHNA			
Current Zone	**Proposed Zone**	**Acreage**	**Parcels**
POS/IL	POS/R-7	47.45	1
R-1	R-7	6.81	5
R-1A	R-7	13.93	5
R-2	R-7	4.61	4
TC-C	TC-R-14	8.61	1
TC-R-22	TC-R-14	14.06	2
TC-R-30	TC-R-14	22.15	1
IL	R-14	2.93	1
CG	R-22	3.25	1
R-2	R-22	4.80	1
R-7/GC	R-22	1.30	1
TC-O/I	TC-R-22	10.00	1
TC-C	TC-R-22	5.26	1
TC-C	TC-R-30	11.11	1
TC-O/I	TC-R-30	10.00	1
GC/IL	R-30	1.96	1
Total		**168.23**	**28**

To ensure that the City monitors its compliance with SB 166 (No Net Loss), the City will monitor the consumption of residential acreage to ensure an adequate inventory is available to meet the City's RHNA obligations. To ensure sufficient residential capacity is maintained to accommodate the RHNA, the City will develop and implement a formal ongoing (project-by-project) evaluation procedure pursuant to Government Code Section 65863. Should an approval of development result in a reduction of capacity below the residential capacity needed to accommodate the remaining need for lower income households, the City will identify and if necessary rezone sufficient sites to accommodate the shortfall and ensure "no net loss" in capacity to accommodate the RHNA.

The City will maintain an inventory of available sites for residential development and provide it to prospective residential developers upon request. The parcel-by-parcel inventory located in **Appendix C, Sites Inventory,** of this Housing Element.

Responsible Agency: City of Santee Department of Development Services
Financing: Department budget
2021-2029 Objectives: Maintain an inventory of the available sites for residential development and provide it to prospective residential developers upon request.
Timeframe: Rezone identified parcels within one year of the Housing Element Adoption; Continue to implement a formal evaluation procedure pursuant to Government Code Section 65863 to monitor the development of vacant and nonvacant sites in the sites inventory and ensure that adequate sites are available to meet the remaining RHNA by income category; Ongoing implementation and annual monitoring and reporting throughout the planning period.

Program 10: By-Right Approval of Projects with 20 Percent Affordable Units on "Reuse" Sites

Pursuant to AB 1397 passed in 2017, the City will amend the Zoning Ordinance to provide by-right approval of housing development in which the project proponent voluntarily includes 20 percent of the units as housing affordable to lower income households, on sites being used to meet the 6th cycle RHNA that represent "reuse sites" from previous Housing Element cycles. Explore by-right approval for any project providing more than 20 percent of units affordable to lower income households. The "reuse" sites are specifically identified in the inventory (see **Appendix C**).

Responsible Agency:	City of Santee Department of Development Services
Financing:	Department budget
2021-2029 Objectives:	Comply with AB 1397 to further incentivize development of housing on sites that have been available over one or more planning periods.
Timeframe:	Update the Zoning Ordinance within one year of Housing Element adoption

Program 11: Accessory Dwelling Units (ADUs)

ADU is an important alternative option for affordable housing. To facilitate ADU development, the City Council approved to waive development impact fees for ADUs for five years effective September 2020. The City will also explore other options to further encourage the construction of ADUs in the community. Options to explore may include increased outreach and education, technical/resources guides online, pre-approved plans, larger unit square footage allowances and reduced setback and lot coverage standards in exchange for deed restrictions, among others.

Responsible Agency:	City of Santee Department of Development Services
Financing:	Department budget
2021-2029 Objectives:	Facilitate the development of 80 ADUs.
Timeframe:	Explore other tools to facilitate ADU construction in 2022 and evaluate potential extension of fee waivers in 2024.

4. REMOVING GOVERNMENTAL CONSTRAINTS AS APPLICABLE

State law requires that housing elements address, and where appropriate and legally possible, remove governmental constraints to the maintenance, improvement, and development of housing.

Objective 6.0: Reduce or remove government constraints to housing production and opportunity where feasible and legally permissible.

Policy 6.1: Promote efficient and creative alternatives to help reduce government constraints.

Policy 6.2: Provide incentives and regulatory concessions for affordable and special needs housing through implementation of the density bonus ordinance and other mechanisms.

Policy 6.3: Facilitate timely building permit and development plan processing for residential construction.

Policy 6.4: Balance the need to protect and preserve the natural environment with the need to provide additional housing and employment opportunities.

Policy 6.5: Approve residential uses if they meet use requirements, development criteria and design requirements of the General Plan and Municipal Code.

Program 12: Monitor Changes in Federal and State Housing, Planning, and Zoning Laws

State law requires that Housing Elements address, and where appropriate and legally **possible, remove governmental constraints to the maintenance, improvement, and** development of housing. The City will also continue to monitor federal and State legislation that could impact housing and comment on, support, or oppose proposed changes or additions to existing legislation, as well as support new legislation when appropriate. The City will also continue to participate in the SANDAG Technical Working Group and Regional Housing Working Group, which monitor State and Federal planning, zoning, and housing legislation. Special attention will be given by the City in the minimizing of governmental constraints to the development, improvement, and maintenance of housing.

The 2021-2029 Housing Element update identified the following governmental constraints to the development or maintenance of housing in Santee, and the City will continue to monitor its development process and zoning regulations to identify and remove constraints to the development of housing.

Emergency Shelters (AB 139, 2019):

- Establish parking requirements based on staffing level only.

Low Barrier Navigation Center (AB 101, 2019):

- Establish provisions for Low Barrier Navigation Centers (LBNC) as development by right in areas zoned for nonresidential zones (including mixed use zones as required by law) permitting multifamily uses if it meets specified requirements. A "Low Barrier Navigation Center" is defined as "a Housing First, low-barrier, service-enriched shelter focused on moving people into permanent housing that provides temporary living facilities while case managers connect individuals experiencing homelessness to income, public benefits, health services, shelter, and housing."

Supportive Housing (AB 2162, 2019/AB 2988, 2020):

- Establish provisions for supportive housing. Projects of up to 120 units be permitted by right in zones where multi-family and mixed-use developments are permitted, when the development meets certain conditions, such as providing a specified amount of floor area for supportive services. The City may choose to allow projects larger than 120 units by right, as well. The bills also prohibit minimum parking requirements for supportive housing within ½ mile of a public transit stop.

Responsible Agency: City of Santee Department of Development Services
Financing: Department budget

2013-2021 Objectives: Monitor State and federal legislation as well as City development process and zoning regulations to identify and remove housing constraints.

Timeframe: Within one year of Housing Element adoption; Annual monitoring and reporting throughout the planning period.

5. AFFIRMATIVELY FURTHERING FAIR HOUSING

To make adequate provision for the housing needs of all economic segments of the community, the housing program must include actions that promote housing opportunities for all persons regardless of their special characteristics as protected under State and Federal fair housing laws.

Objective 7.0 Promote equal opportunity for all residents to reside in the housing of their choice.

Policy 7.1: Prohibit discrimination in the sale or rental of housing with regard to characteristics protected under State and Federal fair housing laws.

Policy 7.2: Encourage the development of residential units that are accessible to disabled persons or are adaptable for conversion to residential use by disabled persons.

Policy 7.3: Reasonably accommodate persons with disabilities who seek waiver or modification of land use controls and/or development standards pursuant to procedures and criteria set forth in the Zoning Ordinance.

Policy 7.4: Accommodate emergency shelters, low barrier navigation center, transitional housing, supportive housing, residential care facilities, and community care facilities in compliance with State laws and City Zoning Ordinance.

Policy 7.5: Collaborate with jurisdictions to explore the merit of a multi-jurisdictional agreement for the provision of emergency shelters.

Policy 7.6: Continue active support and participation with the fair housing service provider to further spatial de-concentration and fair housing opportunities.

Program 13: Equal Housing Opportunity Services

The City of Santee supports fair housing laws and statutes. To promote equal opportunity, the City contracts with the Center for Social Advocacy (CSA) to provide fair housing services. The City participated in a regional assessment of impediments to fair housing choice in 2020. The City will continue to participate in the San Diego Regional Alliance for Fair Housing (SDRAFFH) and take actions to fair housing impediments. The City attends monthly SDRAFFH meetings with the other 17 cities, the County, and fair housing service providers, to address fair housing issues. The City distributes information on fair housing and refers fair housing questions and housing discrimination claims to its fair housing service provider.

As part of its contract with the City, the fair housing service provider will:

- Advocate for fair housing issues

- Conduct outreach and education
- Provide technical assistance and training for property owners and managers
- Coordinate fair housing efforts
- Assist to enforce fair housing rights
- Collaborate with other fair housing agencies
- Refer and inform for non-fair housing problems
- Counsel and educate tenants and landlords

Responsible Agency: City of Santee Department of Development Services; fair housing service provider

Financing: CDBG

2021-2029 Objectives: To affirmatively further fair housing, the City will:

- Continue to contract with a fair housing service provider to provide fair housing services to 500 residents of Santee over the 2021-2029 planning period.
- Participate in regional efforts to address fair housing issues and monitor emerging trends/issues in the housing market.
- Maintain the link on the City website providing information about fair housing services.
- Expand outreach and education of the State's new Source of Income Protection (SB 329 and SB 322), defining public assistance including HCVs as legitimate source of income for housing.
- Contract a fair housing service provider to conduct random testing on a regular basis to identify issues, trends, and problem properties. Specifically, upon release of the 2020 Census data, conduct random testing that reflects the City's changing demographics, if any.

Time Frame: Annual allocation of funds to fair housing service provider. Ongoing implementation of AI recommendations, as applicable to Santee. Annual monitoring and reporting throughout the planning period.

Appendix A: Public Participation

This Appendix contains information on the various public outreach efforts conducted during preparation of the 2021-2029 Housing Element. Public outreach was conducted in three separate ways, as outlined below. In addition, the City Council meeting on January 27, 2021 to review the draft Housing Element and to adopt this document was publicly noticed in the East County Californian and on the City's website.

A. Housing Element Workshops

The City Council held six Housing Element Workshops on the following dates to discuss focused topics regarding the Housing Element:

- October 9, 2019 – Presented the City Council with an overview of the Housing Element update process and new Housing laws.
- March 11, 2020 – Presented the City Council with the RHNA and Residential Sites Inventory, where the City Council had the opportunity to select or dismiss prospective housing sites.
- May 25, 2020 – Presented the City Council with affordable housing strategies, including the concept of inclusionary housing.
- June 24, 2020 – Presented City Council with additional information regarding inclusionary housing. Council directed staff to hold stakeholder meetings with affordable and market-rate housing developers for their input on a potential inclusionary housing program for the City.
- October 28, 2020 – Presented the City Council with summary of meetings with stakeholder groups on inclusionary housing and a survey on inclusionary housing. City Council directed staff to convene a workshop where they could engage directly with stakeholders.
- January 7, 2021 - Discussion between stakeholders and City Council on inclusionary housing.

B. Stakeholder Consultation

A request was made by City Council at the June 24, 2020 meeting to meet with housing stakeholders, including the San Diego Chapter of the Building Industry Association (BIA) for their input on inclusionary housing. Staff engaged with the BIA and on July 17, 2020, staff provided a PowerPoint presentation to their members on the City's exploration of a possible inclusionary housing ordinance. The BIA suggested not moving forward with an inclusionary program primarily because it would raise costs to potential homebuyers. After engaging the BIA, staff reached out to market-rate and affordable housing developers to participate in an Inclusionary Housing Committee. The Inclusionary Housing Committee held its first meeting on October 15, 2020 and consisted of representatives from the BIA, Bridge Housing, Cameron Brothers Company, City Ventures, Mirka Investments, the San Diego Housing Federation, Jamboree Housing Corporation, and Community Housing Works. As a precursor to the meeting, the Committee members were provided a survey with questions on the various aspects of inclusionary housing (see Survey Section below).

1. INCLUSIONARY HOUSING COMMITTEE FINDINGS

At the first Inclusionary Housing Committee meeting, staff provided the Committee with a presentation on the City's efforts to evaluate an inclusionary housing program as a tool for meeting some of its low-income housing production goals. The various components of an inclusionary housing program were discussed, including percentage requirements, applicability, on-site construction requirements, and in-lieu fees. There was consensus among the members that if the City were to move forward with an inclusionary housing program, the program should not mandate the on-site construction of units within a residential development and should allow for the payment of in-lieu fees. Market-rate developers mentioned the difficulty of selling affordable units to qualified individuals or families and affordable housing developers mentioned that many low-income households require supportive services that would not be provided within a market-rate development.

Based on the first Committee meeting and surveys responses received by October 28, 2020, the majority of the members suggested a 10 percent inclusionary housing requirement and making only those developments over 10 units in size subject to the requirement.

A common concern for many of the Committee members is the in-lieu fee, which is paid by housing developers as an alternative to providing affordable units on-site within the development. City Ventures, a market-rate housing developer, cited an example of one city setting an in-lieu fee so high that it resulted in no housing production for a number of years until the fee was reduced. As a counterpoint, Community HousingWorks, an affordable housing developer, mentioned that setting an in-lieu fee too low would not be very beneficial as it would not provide sufficient funds to generate any affordable housing within the City.

In order to determine what a reasonable in-lieu fee would be for Santee, a fee study would be needed. Based on initial outreach to various fiscal analysis firms, it is estimated that such a fee study would cost approximately $37,500, an amount that has been appropriated in the currently adopted Budget. Should the Council decide to move forward with an inclusionary housing program, Staff would return to Council for a request to award funds once a firm is selected through a formal request-for-proposals (RFP) process.

The City Council was presented with a summary of meetings with stakeholder groups on inclusionary housing and a survey on inclusionary housing on October 28, 2020. City Council directed staff to convene a workshop where they could engage directly with stakeholders. The following is a list of those who were invited to the meeting.

Table A-1: Stakeholders List		
Organization	**Contact**	**Services**
Alpha Project	Kyla Winters	Homeless
BIA	Mike McSweeney	Market-Rate Housing
BRIDGE Housing	Damon Harris	Affordable Housing
California Housing Consortium	Ray Pearl	Market-Rate Housing
Cameron Bros	Jim Moxham	Market-Rate Housing
City Ventures	Michelle Thrakulchavee	Market-Rate Housing
Community HousingWorks	Mary Jane Jagodzinski	Affordable Housing
Habitat for Humanity	Karen Begin	Affordable Housing
Jamboree Housing	Michael Massie	Affordable Housing
MirKa Investments LLC	Bob Cummings	Housing Investor
Pacific SW Association Realtors	Robert Cromer	For-sale Housing
Regional Task Force Homeless	Kris Kuntz	Homeless
San Diego Housing Federation	Laura Nunn	Affordable Housing
Veronica Tam & Associates, Inc	Veronica Tam	Housing Consultant
Wiese and Associates	Erik Wiese	Broker

2. STAKEHOLDER SURVEYS

As mentioned above, stakeholders were surveyed. The survey questions the City asked and their answers are shown on the following pages.

Inclusionary Housing Survey

City of Santee

10601 Magnolia Ave.
Santee, CA 92071

The City of Santee is evaluating the potential for adopting an inclusionary housing program as part of its current Housing Element update. Please complete the following Inclusionary Housing Survey based on your organization's experience with housing. Thank you for your time.

Definition: Inclusionary housing programs require developers to provide a certain number of deed-restricted affordable units in a new rental or for-sale residential project or pay a fee in-lieu of providing the units in the development. The funds collected from in-lieu fees can be used by the City to provide or subsidize new affordable housing or preserve existing affordable housing through rental assistance programs.

Organization Name: Contact Person: Date:

1. ***My understanding of inclusionary housing is:***

☐ None ☐ Limited ☐ General ☐ Good

2. ***Inclusionary housing is a good tool for developing affordable housing:***

☐ Disagree ☐ Disagree somewhat ☐ Agree somewhat ☐ Agree

3. ***An inclusionary housing program should include a requirement to build affordable units as part of a development:***

☐ Disagree ☐ Disagree somewhat ☐ Agree somewhat ☐ Agree

4. ***An inclusionary housing program should include the option to pay a fee in lieu of providing affordable units as part of a development:***

☐ Disagree ☑ Disagree somewhat ☐ Agree somewhat ☐ Agree

5. An inclusionary housing program should include the following percentage of affordable units in a new housing development:

☐ 0% ☐ 5% ☐ 10% ☐ 15%

6. An inclusionary housing program should be applicable to developments over:

☐ 2 units ☐ 3 units ☐ 5 units ☐ 10 units

7. An inclusionary housing program should be targeted to those households earning the following percentages of the area median income (AMI):

☐ 40% or less ☐ 60% or less ☐ 80% or less ☐ 120% or less

8. Comments:

[Add your comments here.]

Thank you very much for taking the time to complete this survey. Your feedback is valued and very much appreciated!

Response Summary:

1. My understanding of inclusionary housing is:		
none	0	0%
limited	0	0%
general	1	20%
good	4	80%
Total	5	100%
2. inclusionary housing is a good tool for developing affordable housing		
Disagree	2	40%
Disagree somewhat	0	0%
Agree somewhat	3	60%
Agree	0	0%
Total	5	100%
3. An inclusionary housing program should include a requirement to build affordable units as part of a development:		
Disagree	3	60%
Disagree somewhat	1	20%
Agree somewhat	1	20%
Agree	0	0%
Total	5	100%
4. An inclusionary housing program should include the option to pay a fee in lieu of providing affordable units as part of a development:		
Disagree	2	40%
Disagree somewhat	1	20%
Agree somewhat	1	20%
Agree	1	20%
Total	5	100%
5. An inclusionary housing program should include the following percentage of affordable units in a new housing development:		
0%	2	40%
5%	0	0%
10%	2	40%
15%	1	20%
Total	5	100%
6. An inclusionary housing program should be applicable to developments over:		
2 units	0	0%
3 units	0	0%
5 units	1	25%
10 units	3	75%
Total	4	100%

7. An inclusionary housing program should be targeted to those households earning the following percentages of the area median income (AMI):		
40% or less	0	0%
60% or less	1	25%
80% or less	1	25%
120% or less	2	50%
Total	4	100%

8. Comments

Respondent 1

As touched on in answer #7, Housing is the only item in the marketplace which government requires the producer of the product to subsidize their product for low income users (customers). Society finds ways to subsidize utilities, cell phones, food, by imposing a small fee on ALL users of the service or by direct public subsidization from tax subsidies (farm subsidies). For a successful subsidized home (shelter) program your City should identify a broad-based funding source and not "tax the producer" as the funding solution.

Respondent 2

I question whether economically viable on 10 units or less. The inclusionary housing component should be over and above allowable maximum density. For example, at 30 units to the acre on 3 acres the developer could build 90 conventional units and add 9 affordable units for a total of 99 units.

Respondent 3

Hello!
Regarding Question 6 above, it is my opinion that an inclusionary housing program should not be required or mandated on new development. Should a developer wish to include inclusionary housing within its project, then incentives should be granted. In other words, incentivize a developer to include inclusionary housing so that it is a win-win for both the jurisdiction (i.e. income-restricted affordable units are produced) and the developer (i.e. the project will be economically feasible). Incentives can include things like reduced setbacks, reduced parking standards, increased height, increased density, reduced impact fees, project entitlement streamlining, etc.

Regarding Question 7 above, in the event of an inclusionary housing program, the targeted AMI should depend on the type of product being proposed for development. For example, it is not financially feasible to provide affordable units within a for-sale project where those units are targeted to households earning less than 80% of the area median income. In San Diego County, the current median income is $92,700. At 80%, the income for a family of four is $74,160 per year. After accounting for mortgage interest, PMI (private mortgage insurance), property tax, utilities, and HOA, the max purchase price on the sale of that home cannot exceed ±$228,000 as the monthly housing expense for that family cannot exceed 30% of that family's yearly income. After accounting for the cost of the land, the cost to develop, the cost to build, and the fees paid to the City and other governmental agencies, the developer would actually be losing money on the construction and sale of that affordable unit. The loss to the developer is only exacerbated when the percentage of AMI required is lower.

Below in italics is a statement borrowed from the Building Industry Association's Orange County Chapter Board of Directors, of which I have previously served on. I echo the statement made below.

"Our position is that Housing remains a critical issue in California with the situation growing more serious with each passing day. Studies show that the State needs over 180,000 new units each year and at best we are producing 80,000. This has caused a cascading spike in home prices across the region. With this ever-growing deficit, we need to have an honest conversation about Inclusionary Zoning Policies. In total, such policies restrain housing production, increase ownership costs, and further complicate attainability for the majority of the region. In a study by Benjamin Powell, Ph.D. and Edward Stringham, Ph.D., titled, Housing Supply and Affordability: Do Affordable Housing Mandates Work?, the authors discovered that in the 45 cities where data was available, new housing production drastically decreased by an average of 31% within one year of adopting inclusionary housing policies. Additionally, the study suggests that inclusionary housing polices can increase new housing costs by $22,000 to $44,000, with higher priced markets increasing by $100,000. Supporting these conclusions is a recent report from the Legislative Analyst's Office titled Perspectives on Helping Low-Income Californians Afford Housing. In this report, it states that "attempting to address the state's affordability challenges primarily through expansion of government programs likely would be impractical." Further, that "extending housing assistance to low-income Californians who currently do not receive it – either though subsidies for affordable units or housing vouchers – would require an annual funding commitment in the low tens of billions of dollars. As such it finds that "many housing programs – vouchers, rent control, and inclusionary housing – attempt to make housing more affordable without increasing the overall supply of housing. This approach does very little to address the underlying cause of California's high housing costs: a housing shortage.""

Respondent 4

Inclusionary housing is one tool to help promote the development of affordable housing. There are a lot more options that can be just as effective, primarily the political will to develop affordable projects.

Respondent 5

As an affordable housing provider, I can tell you affordable units are produced most during healthy market rate production. Any requirement should be incentive based.

Appendix B: Accomplishments under Adopted Housing Element

Government Code Section 65588(a) requires each jurisdiction to review its housing element as frequently as appropriate to evaluate:

- The appropriateness of the housing goals, objectives, and policies in contributing to the attainment of the state housing goal;
- The effectiveness of the housing element in attainment of the community's housing goals and objectives; and
- The progress of the city, county or city and county in implementation of the housing element.

This appendix documents the City's achievements under the 2013-2021 Housing Element with respect to the actions and objectives contained therein. Based on the relative success of the City's efforts in implementing the 2013 programs, recommendations for program modifications are provided for the 2021-2029 Housing Element Update. Table B-1 identifies these housing programs and provides a summary of accomplishments during the 2013-2021 Housing Element cycle. Table B-2 presents quantified accomplishments during this period.

Table B-1: Summary of Program Accomplishments 2013 through 2021[7]		
Program (2013-2021)	**Objectives**	**Evaluation and Continued Appropriateness for 2021-2029 Housing Element**
Program 1: Code Enforcement	Continue to implement Municipal Codes (Titles 15 and 17), the 2016 California Building Code and Uniform Housing Code.	The Department of Development Services and Code Enforcement implemented the Municipal Code, the California Building Code and the Uniform Housing Code by issuing notices of violations and fines for all violations reported to the City. Between 2013 and 2019, Code Enforcement made over 4,750 inspections, opened 1,253 cases, closed 3,313 cases, and referred 29 cases to the City Attorney's Office. *Continued Appropriateness: Modified or removed* The 6th cycle Housing Element specifies housing programs with specific actions, measurable objectives, and timelines. This program may be removed as a Housing Element program or modified with specific actions to improve housing conditions.
Program 2: Mobile Home Conversion Regulations	Assess the impact of the loss of affordable housing opportunities through implementation of mobile home conversion regulations.	No mobile home conversions occurred between the 2013 and 2019 period. *Continued Appropriateness: Modified and combined with Mobile Home Park Assistance program* Conversion of mobile home parks must adhere to regulations monitored by the State Department of Housing and Community Development.
Program 3: Minor Home Improvement Loans	Assist 10 lower income homeowners annually through funding service providers that provide home security devices and minor home repairs.	The City has contracted with Lutheran Social Services' Caring Neighbors program to provide this service to Santee seniors to accomplish this program. An average of 66 seniors were assisted annually during 2013-2019 period (459 total). In addition, CDBG recipient Home of Guiding Hands rehabilitated 12 homes during this period. *Continued Appropriateness: Modified and continued* Due to lack of funding, City will no longer be implementing this program.

[7] The table reflects the accomplishments from FY2013 to FY2019. Pending FY 2020 accomplishments.

Table B-1: Summary of Program Accomplishments 2013 through 2021[7]		
Program (2013-2021)	**Objectives**	**Evaluation and Continued Appropriateness for 2021-2029 Housing Element**
Program 4: Conservation of Existing and Future Affordable Units	Monitor the status of the 309 at-risk units at Carlton Country Club Villas and Woodglen Vista. The City of Santee will work with property owners, interest groups and the State and federal governments to implement the following programs on an ongoing basis to conserve its affordable housing stock.	The City did not receive notice of intent to opt out as affordable housing between 2013 and 2019. The Woodglen Vista Apartments and the Carlton County Club Villas were refinanced and the affordability period extended in 2017 and 2018 (respectively). In 2015, the City approved the expansion of the Cameron Estates Mobile Home Park with the addition of 16 more mobile homes to this park. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will update the inventory of at-risk housing and include specific actions to monitor and preserve at-risk housing projects.
Program 5: Housing Choice Voucher Program	Continue to contract with the San Diego County Housing Authority to administer the Housing Choice Vouchers Program and assist approximately 2,400 extremely low and very low income households during the planning period. Promote the Housing Choice Vouchers program on City website. Support the County Housing Authority's applications for additional voucher allocations and efforts to maintain and expand voucher use in the City.	Santee is among 12 cities served by the Housing Authority of the County of San Diego. An average of 570 households per year received Housing Choice Vouchers during the 2013 to 2019 period (2,177 total), with the highest single year being 2013 with 361 vouchers offered. According to the County Housing Authority, as of December 31, 2019, 285 households were using a Housing Choice Voucher to help pay for rent in the City of Santee and 1,745 applications submitted by Santee residents were recorded on a waiting list. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will include a program to promote HCVs and also to educate the public regarding the source of income protection under new State law that requires rental property owners to regard public assistance as a legitimate source of income.
Program 6: Mobile Home Park Assistance Program	Circulate fliers to existing mobile home renter parks periodically. Co-sponsor MPAP applications as opportunity arises.	No parks were at risk of converting between 2013 and 2019. *Continued Appropriateness: Modified and combined with Mobile Home Conversion Regulations* The 6th cycle Housing Element will include a program to provide financial and technical assistance to mobile home park residents who wish to purchase their mobile home parks and convert the parks to resident ownership.

Table B-1: Summary of Program Accomplishments 2013 through 2021[7]		
Program (2013-2021)	**Objectives**	**Evaluation and Continued Appropriateness for 2021-2029 Housing Element**
Program 7: First Time Homebuyer Program	Assist 40 lower income households with downpayment and closing cost assistance during the planning period (Seven at <50 percent AMI and 33 at 51-80 percent AMI).	The program did not meet its goal of assisting 40 lower income homebuyers (5 homebuyers annually); however, the City was able to originate 14 loans between 2013 and 2019. The reduction in first-time homebuyer assistance was possibly be due to higher home prices. At higher home prices, low-income buyers have difficulty staying below the maximum housing debt ratio of 38 percent. *Continued Appropriateness: Modified and combined with homeownership assistance programs* With limited funding and rising home prices, the ability of the City to provide homebuyer assistance would be limited. The 6th cycle Housing Element will include a program that outlines various resources available.
Program 8: San Diego County Regional Mortgage Credit Certificate Program	Facilitate the provision of 24 MCCs during the planning period (eight at <80 percent AMI and 16 at 80-120 percent AMI). Continue to promote the MCC program by notifying eligible applicants to other City programs and providing information on the City's website.	During the 2013-2019 period, 11 Santee residents received MCCs. Affordable Housing Applications, Inc. administered the program from 2013 to 2016. The San Diego Housing Commission administered the MCC program for the City of Santee on behalf of the County of San Diego from 2017 to 2018. The California Housing Finance Agency (CalHFA) administered the MCC program in the County of San Diego for all cities except for the City of San Diego in the subsequent years. *Continued Appropriateness: Modified and combined with homeownership assistance programs* With limited funding and rising home prices, the ability of the City to provide homebuyer assistance would be limited. The 6th cycle Housing Element will include a program that outlines various resources available.
Program 9: Manufactured Home Fair Practices Program	Assist approximately 1,200 mobile homeowners. The City regulates space rents in mobile home parks and provides staff support to the Manufactured Home Fair Practices Commission, which holds biannual meetings. The program requires significant financial resources in administration and legal defense of the Ordinance.	The Manufactured Home Fair Practices Commission met biannually each year of the 2013-2020 period to hear comments from park residents and owners and provide direction to staff. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will include a modified program that promotes the services of the Manufactured Home Fair Practices Commission.

Table B-1: Summary of Program Accomplishments 2013 through 2021[7]		
Program (2013-2021)	**Objectives**	**Evaluation and Continued Appropriateness for 2021-2029 Housing Element**
Program 10: Facilitate Affordable Housing Development	Collaborate with developers of affordable housing over the planning period to facilitate the construction of 62 affordable units over the planning period (Two extremely low income, five very low income, 35 low income, and 20 moderate income units)	Between 2013 and 2019, 49 deed restricted units were permitted (10 very low income, 37 low income, and 2 moderate income). No requests were received during the 2013-2020 period. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will include an updated program to facilitate affordable housing, including resources and incentives available to the City.
Program 11: Supportive Services	Assist 1,000 persons with temporary shelter and supportive services during the planning period (400 meals for lower income seniors, case management for 200 lower income seniors, and temporary shelter, food, and clothing for 400 lower income individuals and families affected by domestic violence).	The City has contracted with Crisis House to provide a Homeless Prevention and Intervention program. An average of 207 people per year were assisted through this program from 2013-2019 (1,511 total). The City also contributed CDBG funding to the Meals-on-Wheels program, which provides two meals per day to homebound seniors; an average of 109 seniors were assisted annually between 2017 and 2019 (328 total). In addition, the City provides CDBG funding to the Santee Food Bank, which assisted an average of 12,819 persons per year (38,457 persons total) between 2017 and 2019. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will include a program to identify the range of supportive services needed in the community and resources available to address these needs.
Program 12: Inventory of Available Sites	Maintain an inventory of the available sites for residential development and provide it to prospective residential developers upon request.	An inventory of available sites for residential development is maintained by the City and is available to prospective residential developers by City staff upon request. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will include an updated sites inventory to accommodate the new Regional Housing Needs Assessment (RHNA), estimated at 1,219 units. The new sites inventory will reflect the rezoning and upzoning of properties completed to accommodate the RHNA.
Program 13: Lot Consolidation Incentives	Update the Zoning Ordinance and/or Subdivision Ordinance to include lot consolidation incentives.	The City is completing a comprehensive update to its Municipal Code and in the coming year, the City will develop strategies for lot consolidation and draft an ordinance that encourages lot consolidation. *Continued Appropriateness: Modified and continued* The 6th cycle Housing Element will not include a lot consolidation program as this program.

Table B-1: Summary of Program Accomplishments 2013 through 2021[7]		
Program (2013-2021)	**Objectives**	**Evaluation and Continued Appropriateness for 2021-2029 Housing Element**
Program 14: Monitoring of Residential Capacity (No Net Loss)	Develop and implement a formal evaluation procedure pursuant to Government Code Section 65863.	Development Services staff continue to monitor all proposed development projects for potential effects on RHNA inventory. *Continued Appropriateness: Modified*
Program 15: Farm Worker Housing	Review and revise the Zoning Ordinance to address compliance with Health and Safety Code Sections 17021.5 and 17021.6.	This program was accomplished on 2016. Section 17.10.03.F of the Zoning Ordinance has been updated to allow farm worker housing in residential zones. *Continued Appropriateness: Completed* The 6th cycle Housing Element will include an updated program to identify other Zoning Code amendments required to comply with new State laws, such as Low Barrier Navigation Center, Emergency Shelters and Supportive Housing, Accessory Dwelling Units, and Density Bonus for 100 Percent Affordable Housing.
Program 16: Monitor Changes in Federal and State Housing, Planning, and Zoning Laws	Monitor State and federal legislation as well as City development process and zoning regulations to identify and remove housing constraints.	Staff planners and attorneys continually monitor state and federal law. As an example, the City is requiring "No Net Loss" of low and moderate income residential units identified in the Housing Element, in accordance with Senate Bill 166 (SB166). *Continued Appropriateness: Combined with new program for affordable housing development.*
Program 17: Equal Housing Opportunity Services	Continue to contract with a fair housing service provider to provide fair housing services to 500 residents of Santee over the 2013-2021 planning period. Participate in regional efforts to update the AI every five years. Maintain the link on the City website providing information about fair housing services.	Fair housing provider CSA of San Diego County assisted an average of 58 Santee residents (439 total) between 2013 and 2019. The City also participated in the 2015-2019 and 2020-2024 updates of the San Diego County Regional Analysis of Impediments (AI). *Continued Appropriateness: Modified and continued* Pursuant to new State law, the 6th cycle Housing Element will include a program to actively further fair housing choice in the City.

Table B-2: Housing Element Accomplishments (Calendar Years 2013 through 2020)										
Housing Assistance Type	**Objectives**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Housing Units Constructed										
Very Low Income 30-50% AMI	914	10	0	0	0	0	0	0		10
Low-Income 50-80% AMI	694	41	0	0	2	0	0	0		43
Moderate Income 80-120% AMI	462	80	0	0	0	16	0	1		97
Above Moderate Income +120% AMI	1,410	368	175	5	50	128	157	114		997
Total	3,660	499	175	5	52	144	157	115		1,147
Housing Units Conserved										
Section 8 At-Risk	309	309	309	309	309	309	309	309		309
Housing Units Rehabilitated										
Rehabilitation Loans	80	2	2	2	2	2	2	0		12
Rental Assistance										
Housing Choice Vouchers	2,400	361	344	333	286	284	284	285		2,077

Appendix C: Sites Inventory

Table C-1 starting on page C-2 presents a detailed list of parcels used in Section 4, Housing Resources, to demonstrate that the City has adequate capacity to accommodate the 2021-2029 RHNA. Figure C-1 provides the geographic location of the parcels within Santee.

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
Lower Income Sites								
15*	38104036 Walmart	TC-R-22	22	5.26	115	TC-C	Vacant site in town center (opportunity site due to high density allowed and near transit). To be rezoned from commercial (TC-C) to residential use (TC-R-22). Maximum allowable density to be 30 du/ac. Privately owned. Half mile to park, town center, Sprouts across street, in high resource area in TCAC/HCD opportunity map.	Vacant
16A*	38105082 Parcel 6 Portion	TC-R-30	30	11.11	333	TC-C	Vacant site in town center (opportunity site due to high density allowed and near transit). To be rezoned from commercial (TC-C) to residential use (TC-R-30). Minimum and maximum allowable density to be 30 du/ac. Privately owned. Across the street from park, half mile to town center services, 128 unit (Cornerstone) built across street on Northern end, in high resource area in TCAC/HCD opportunity map.	Vacant
20A*	38105081 9200 Magnolia Ave	TC-R-22	22	10.00	220	TC-O/I	Underutilized site with Polo Barn structure in town center (opportunity site due to high density allowed and near transit). To be rezoned from TC-O/I to residential use (TC-R-22). Maximum allowable density to be 30 du/ac. County owned. Half mile to park, <1 mile to town center services, in high resource area in TCAC/HCD opportunity map.	Nonvacant
20B*	38105081 9200 Magnolia Ave	TC-R-30	30	10.00	300	TC-O/I	Underutilized site with Polo Barn structure in town center (opportunity site due to high density allowed and near transit). To be rezoned from TC-O/I to residential use (TC-R-30). Minimum and maximum allowable density to be 30 du/ac. County owned. Half mile to park, <1 mile to town center services, in high resource area in TCAC/HCD opportunity map.	Nonvacant

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
21[PC]	38410616 8942 1st St	TC-R-22	22	0.60	13	N/A	Underutilized site with single-family home in town center (opportunity site due to high density allowed and near transit). Maximum allowable density is 30 du/ac. Privately owned. Half mile to park, <1 mile to town center services, in high resource area in TCAC/HCD opportunity map. Owner expressed interest in MF housing, City in discussion with Habitat for Humanity, have site plans for it.	Nonvacant
22*	38447009 Rockvill St	R-30	30	1.96	58	GC/IL	Vacant site to be rezoned from GC/IL to R-30. Minimum and maximum allowable density to be 30 du/ac. Privately owned. Proposal for workforce housing on site; 59 units on proposal. Slightly over half mile from park, ~ one mile from town center, in moderate resource area according to TCAC/HCD opportunity map.	Vacant
24*	38416204 9953 Buena Vista Ave	R-22	22	4.80	105	R-2	Underutilized site with one single-family home. To be rezoned from R-2 to R-22. Maximum allowable density to be 30 du/ac. Privately owned. Less than half mile from town center, ~half mile to park, moderate resource area TCAC/HCD opportunity map. Owner has tried to develop before; Previous offer from Navy for workforce housing.	Nonvacant
29*	38630031 7737 Mission Gorge Rd	R-22	22	3.25	64	GC	Underutilized commercial lot to be rezoned from GC to R-22. Maximum allowable density to be 30 du/ac. Privately owned. Less than half mile from trails, <1 mile from elementary school and park, in high resource area TCAC/HCD opportunity map. Currently an application to build 88 townhouses on site. Owner support upzone because have ran into density issues in past efforts to develop	Nonvacant

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
30*, PC	38630009 8714 Starpine Dr	R-22	22	1.30	28	R-7/GC	Underutilized site with one single-family home. To be rezoned from R-7/GC to R-22. Maximum allowable density to be 30 du/ac. Privately owned. Less than half mile from trails, less than one mile from elementary school/park, in high resource area TCAC/HCD opportunity map	Nonvacant
31PC	38306103 7980 Mission Gorge Rd	R-22	22	5.23	80	N/A	Underutilized site with one single-family home. Maximum allowable density is 30 du/ac. Privately owned. Half mile from trail, park, and elementary school, high resource area TCAC/HCD opportunity map.	Nonvacant
32PC	38306101 7950 Mission Gorge Rd	R-22	22	0.95	20	N/A	Underutilized site with one single-family home. Maximum allowable density is 30 du/ac. Privately owned. Half mile from trail, park, and elementary school, high resource area TCAC/HCD opportunity map.	Nonvacant
Lower Income Sites Subtotal				**54.46**	**1,336**			
Moderate Income								
16B*	38105082 Parcel 6 Portion	TC-R-14	14	8.61	120.	TC-C	Vacant site to be rezoned from TC-C to TC-R-14. Privately owned. Zoning would be consistent with adjacent residential development.	Vacant
17*, PC	38105118 Cottonwood Ave	TC-R-14	14	22.15	279	TC-R-30	Vacant site to be rezoned from TC-R-30 to TC-R-14. County owned. New zoning more realistic for area (reduce parking/traffic issues), new density consistent with density allowed North of River.	Vacant
18*, PC	38105117 Cottonwood Ave	TC-R-14	14	11.71	98	TC-R-30	Vacant site to be rezoned from TC-R-30 to TC-R-14. County owned. New zoning more realistic for area (reduce parking/traffic issues), new density consistent with density allowed North of River.	Vacant
19*,PC	38103208 Park Center Dr	TC-R-14	14	2.35	32	TC-R-22	Vacant site to be rezoned from TC-R-22 to TC-R-14. Privately owned.	Vacant
23	38414211 10952 Sunset Trl	R-14	14	1.24	17	N/A	Underutilized site with 2 single family homes built in 1942. Privately owned.	Nonvacant

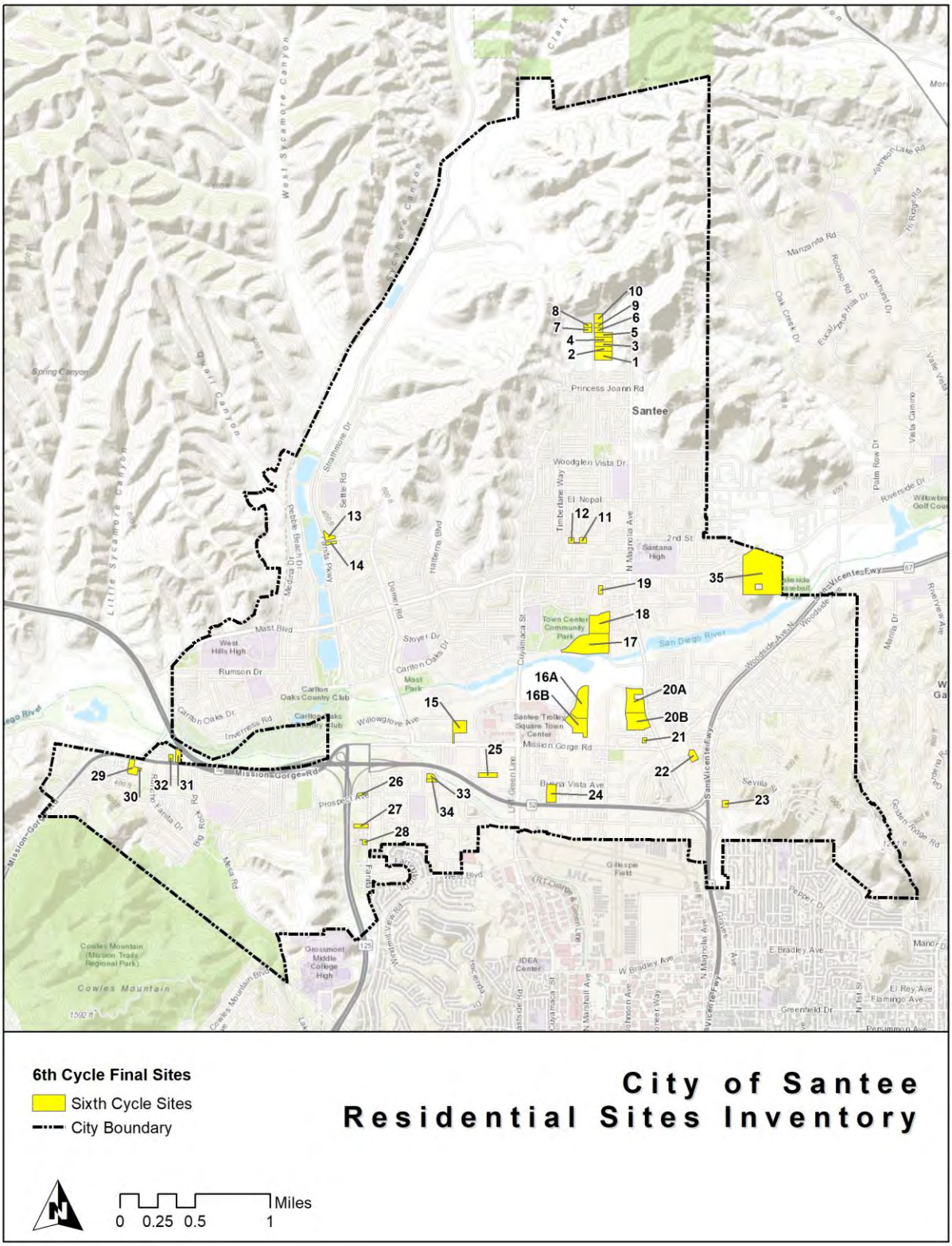
Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
25*	38402007 8801 Olive Ln	R-14	14	2.93	41	IL	Underutilized site to be rezoned from IL to R-14. Privately owned. Adjacent to residential zone; development across the street approved at 16 du/ac. In airport zone 2, need to cap at 16 du/acre.	Nonvacant
Moderate Income Sites Subtotal				**48.99**	**587**			
Above Moderate								
1*	37819001 10939 Summit Ave	R-7	7	4.65	29	R-1A	Underutilized site with single-family home built in 1974. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
2*	37818010 11009 Summit Ave	R-7	7	2.32	14	R-1A	Underutilized site with single-family home built in 1968. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
3*	37818009 11025 Summit Ave	R-7	7	2.32	14	R-1A	Underutilized site with single-family home built in 1948. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
4*	37818008 11041 Summit Ave	R-7	7	2.32	14	R-1A	Underutilized site with single-family home built in 1963. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
5*	37818007 11059 Summit Ave	R-7	7	2.32	11	R-1A	Underutilized site with single-family home built in 1940. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
6*	37818029 10215 Summit Crest Dr	R-7	7	1.16	8	R-1A	Underutilized site with single-family home built in 1989. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
7*	37821021 11010 Summit Ave	R-7	7	1.15	8	R-1A	Underutilized site with single-family home built in 1980. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
8*	37821020 11020 Summit Ave	R-7	7	1.02	7	R-1A	Underutilized site with single-family home built in 1975. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
9*	37818028 11115 Summit Ave	R-7	7	1.16	8	R-1A	Underutilized site with single-family home built in 1970. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
10*	37818020 11129 Summit Ave	R-7	7	2.32	11	R-1A	Underutilized site with single-family home built in 1950. Summit Ave sites is an opportunity site: larger, relatively flat parcels suitable for small lot subdivisions in the 7 to 14 du/ac range. Lot size consistent with past development (Santee made up 6,000 sq ft lots). Lots on Summit would be about 4,000 sq ft. To be rezoned from R-1A to R-7. Privately owned. On Private road, would require right of way.	Nonvacant
11*	38103107 9945 Conejo Rd	R-7	7	1.19	8	R-2	Underutilized site with single-family home built in 1958. To be rezoned from R-2 to R-7. Privately owned. Upzone would be consistent with surrounding development.	Nonvacant

Table C-1: Sites Inventory								
Map ID #	**APN / Address**	**Land Use Designation/ Zone District**	**Density Factor (du/ac)**	**Lot Size (Acres)**	**Capacity**	**Rezoned From**	**Existing Use/Reason for Selection**	**Status**
12*	38169028 9960 Conejo Rd	R-7	7	0.86	6	R/2	Underutilized site with single-family home built in 1953. To be rezoned from R-2 to R-7. Privately owned. Upzone would be consistent with surrounding development. Property owner interested in developing in the past and has restricted due to zoning.	Nonvacant
13*	38003118 Lake Canyon Rd	R-7	7	1.67	11	R-2	Vacant site to be rezoned from R-2 to R-7.	Vacant
14*	38003118 Lake Canyon Rd	R-7	7	0.89	6	R-2	Vacant site to be rezoned from R-2 to R-7.	Vacant
26PC	38349056 Prospect Ave	R-7	7	0.72	4	N/A	Vacant site. Privately owned. Properly zoned.	Vacant
27PC	38619217 8572 Fanita Dr	R-7	7	1.73	12	N/A	Underutilized site with single-family home built in 1950. Has dilapidated street/incomplete sidewalk. Privately owned. Properly zoned.	Nonvacant
28	38669038 8504 Fanita Dr	R-7	7	0.68	4	N/A	Vacant site along dilapidated street/incomplete sidewalk. Privately owned. Properly zoned.	Vacant
33PC	38401115 8750 Atlas View Dr	R-7	7	1.85	9	N/A	Underutilized site with single family home built on 1958. Privately owned. Properly zoned.	Nonvacant
34PC	38401255 8742 Atlas View Dr	R-7	7	0.91	6	N/A	Underutilized site with single family home built on 1954.Privately owned Properly zoned.	Nonvacant
35*	37903031 Mast Blvd	POS/R-7	7	47.45	122	POS/IL	Vacant site to be rezoned from POS/IL to POS/R-7. Site has not been used as LI for 10 years; City has received pre-application from owner for MFR project in LI.	Vacant
Above Moderate Sites Subtotal				**78.69**	**312**			
Sites Inventory Total				**182.14**	**2,235**			
Asterisk (*) denotes sites that will be rezoned. PC denotes sites that appeared in the Previous Cycle (5th cycle).								

Figure C-1: Residential Sites Inventory



Appendix D: Undeveloped/ Underutilized General Industrial (IG) Sites

The City revised the Zoning Ordinance in January 2013 to allow emergency shelters within the General Industrial (IG) zone with a ministerial permit pursuant to SB 2 enacted in 2007. The amendment allows owners of property within the IG zone to develop sites with emergency shelter in accordance with State law. The IG zone covers approximately 111 acres on 130 parcels in Santee. Vacant or underutilized parcels within the IG zone are presented in Table D-1. See Figure D-1 on the next page for parcel locations on Woodside Avenue North.

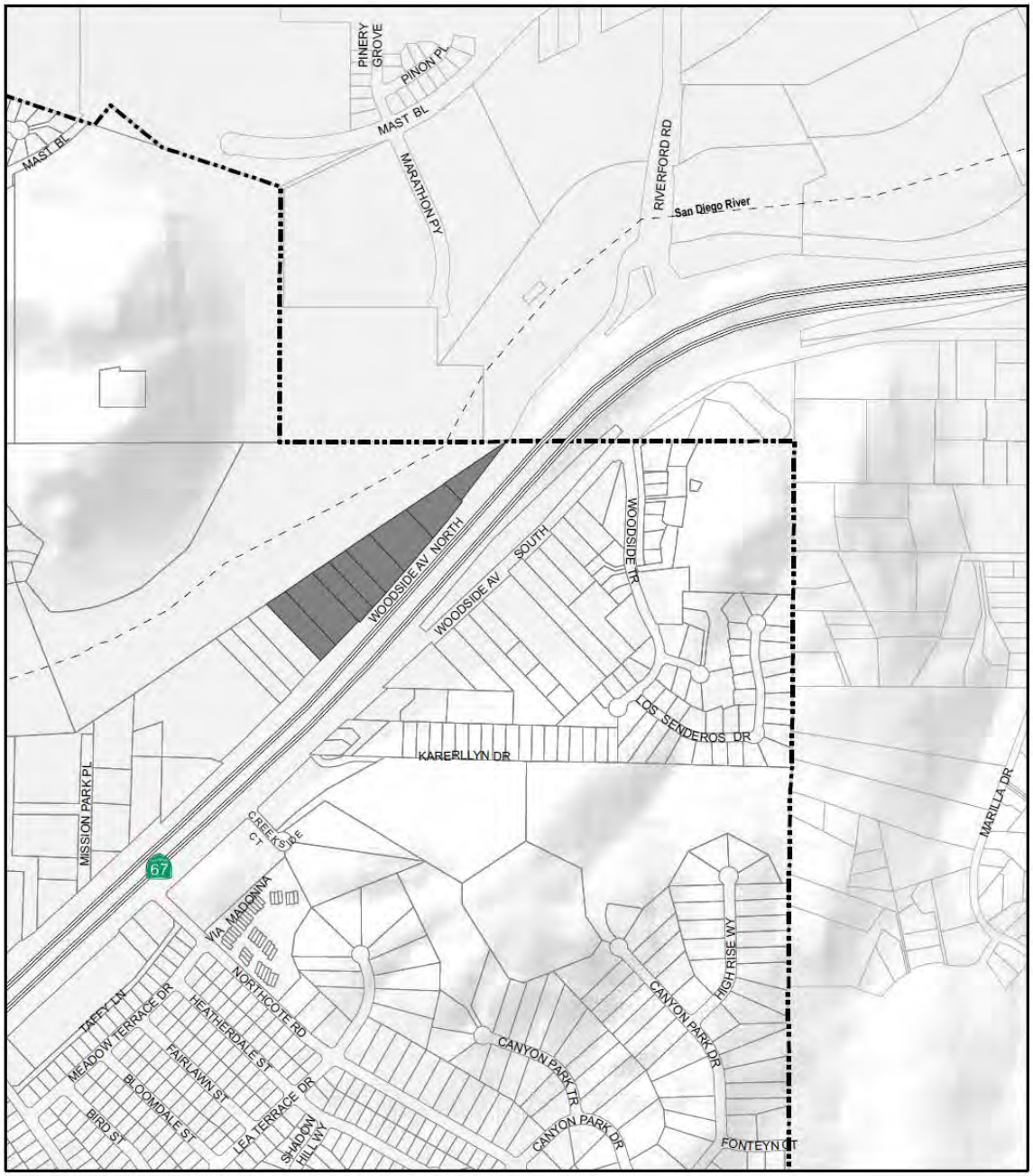
Table D-1: Undeveloped/Underutilized General Industrial (IG) Parcels

Parcel Number	Acreage	Existing Uses/Improvements
384-190-10	0.15	OUTDOOR STORAGE/ASPHALT
384-180-50	0.78	OUTDOOR STORAGE/ASPHALT
384-180-27	0.69	OUTDOOR AND FLEET STORAGE/ASPHALT
384-180-20	0.19	UNDEVELOPED/UNIMPROVED
384-180-13	0.59	OUTDOOR AND FLEET STORAGE/ASPHALT
384-261-20	0.71	OUTDOOR STORAGE/ASPHALT
TOTAL	3.11	

Source: City of Santee, 2020.

These parcels are considered underutilized because they are currently vacant or being used for outdoor storage or fleet storage with limited or no site improvements. The undeveloped and underutilized IG-zoned parcels have adequate capacity to accommodate an emergency shelter that could serve at least 25 homeless individuals (identified unsheltered homeless population in Santee in January 2020) or at least one year-round emergency shelter.

Figure D-1: Undeveloped/Underutilized General Industrial Parcels



Legend

- Selected Parcels
- City Boundary
- Freeway
- River

N

0 0.1 0.2 Miles

Source: SanGIS/SANDAG GIS Data Warehouse

From:	Chris Jacobs
To:	Marni Borg
Subject:	FW: Fanita Ranch FREIR - PWS Exhibit 33
Date:	Monday, July 25, 2022 5:09:50 PM
Attachments:	PWS Exhibits 33 Fanita FREIR July 2022.pdf

From: Save Fanita <savefanita@gmail.com>
Sent: Sunday, July 24, 2022 4:08 PM
To: Chris Jacobs <CJacobs@CityofSanteeCa.gov>
Subject: Fanita Ranch FREIR - PWS Exhibit 33

Ellen O'Brien / News21

Developments in disaster-prone areas means big bucks for builders, but can leave communities at risk

Published Tuesday, Aug. 13, 2019

By Anna Huntsman and Jake Steinberg | News21

ELFIN FOREST, Calif. — Elfin Forest is named for the miniature trees that blanket the surrounding ridgeline. The terrain acts like a wall, which has until recently prevented suburban San Diego from sprawling into the bucolic valley.

The town, home to 800 people and 300 horses, bills itself as "A Rural Community." It's accessed by a single winding two-lane road. When the valley catches fire, as it does periodically, that road is the only escape route. Residents will soon share it with 700 new neighbors.

"We're already at maximum density when it comes to evacuation," said JP Theberge, chairman of the Town Council. "This is a catastrophe waiting to happen."

The U.S. has spent more than $500 billion over the past five years cleaning up after a spate of record-breaking hurricanes and wildfires – climate-related disasters the government expects to become more frequent and more furious. Federal firefighting costs now consume more than half of the National Forest Service's budget. The National Flood Insurance Program is $20.5 billion in debt. Critics say these programs have subsidized risky land-use choices for decades, and now the bill is coming due.

Yet, from coast to coast, homes continue to go up in floodplains and areas frequented by fire. An emboldened alliance of experts, environmentalists and concerned citizens is pushing back against business-as-usual development.

After consecutive major floods in 2015, 2016 and 2017, Charleston, South Carolina, residents are calling for the city to prevent a man-made disaster in its low-lying suburbs. Builders are filling in the wetlands of nearby Johns Island, where the city has approved nearly 2,000 housing permits since 2015. In a neighboring suburb, overdevelopment was linked to flooding that forced the city to buy out homes and temporarily ban new construction there.

In the next 15 years, more than $63 billion in real estate in coastal cities such as Charleston, Miami and Galveston, Texas, will experience chronic flooding, according to a report on sea level rise released last year by the Union of Concerned Scientists.

"This whole practice of development that's going on right now is dangerous and it's putting people at risk," said Phil Dustan, an expert in rising sea levels who has studied Charleston's topography. "It could create a (Hurricane) Katrina-type situation with housing developments."

Local governments don't have the incentive or, often, the power to stop risky development. When homes are destroyed, taxpayer dollars often cushion the blow. Developers exercise immense political power, especially in growing cities where housing is needed. People want to live in these areas.

"As a society, we really like living near water. We love living in the wildland urban interface, in the mountains and we love nature, and these are the places in particular where the disasters are more prevalent," said Leslie Chapman-Henderson, president of the Florida-based Federal Alliance for Safe Homes (FLASH). "Should we be dredging up sand to build those places back up? Or should we just acknowledge that we shouldn't put structures there?"

Two communities on opposite sides of the country, one plagued by fire, the other by flooding, exemplify the precarious politics of building in disaster-prone areas. In San Diego County and Charleston, as elsewhere, experts warn that tomorrow's disasters are being built today.

Topographical maps of Johns Island in South Carolina show the low-lying areas where new developments are being built. Residents have opposed such dense developments out of fear that they will worsen the flooding that already plagues the area. (Jake Steinberg/News21)

San Diego County residents line up to comment on a proposed housing development in an area that has burned every seven years on average since 1950. The development was approved. (Kailey Broussard/News21)

California: 'We call it the death trap'

The 2014 Cocos Fire in Harmony Grove took everything from Lali Mitchell: Her father's writing from the 1940s, her son's vintage Marvel comic book collection, the 100-year-old oak her kids played under.

"My mind was just pulverized," she said. "It's so big that you just can't cry about it. It's just gone."

With flames at her back, Mitchell, 77, escaped by way of the neighborhood's single road. Fire afflicts Harmony Grove regularly, and Mitchell has lived through many blazes since moving there in 1976.

But a recently approved housing project along her only escape route could put more than 400 additional cars on the road during an evacuation. If it's built, Mitchell said, staying won't be an option.

Lali Mitchell lives along Country Club Road, a winding, dead-end street in Harmony Grove, California. In the 2014 Cocos Fire, traffic snarled as residents fled their homes. Mitchell said the road would not support increased traffic from new residents. "There's no way you could be safe here," she warned. (Kailey Broussard/News21)

Lali Mitchell's first home in Harmony Grove, California, where she had lived since moving to the area in 1976, was destroyed in the 2014 Cocos Fire. She said the fire destroyed tens of thousands of dollars worth of art, as well as family mementos, such as her father's typewriter. "She was her own beautiful thing," Mitchell said of her burned house. (Kailey Broussard/News21)

"There's no way you could be safe here," she said. "We're terribly concerned with what they're creating. We call it the death trap."

The project, called Harmony Grove Village South, represents a fraction of the more than 10,000 homes due to be built in the riskiest fire-prone highlands of San Diego County.

As in other metro areas across the nation, the cost of a home in San Diego County is soaring. The median home price is $590,000 — double the national average — and the county is 100,000 housing units short of its 2020 goal.

"We need affordable housing. And we need to better protect the region from our greatest natural threat – wildfire," Dianne Jacob, chairwoman of the county board of supervisors, said in her 2019 state of the county speech. "We're facing a conflict between shelter and safety, and we must find some balance in this battle."

But recently, housing – and those whose business is to build it – have been winning. County supervisors have approved a steady stream of projects that require amending the county's general plan, which prioritizes growth in the urban lowlands to keep it out of rural areas with limited infrastructure and severe fire risk.

Amending the plan usually increases the number of homes developers can build, which clears the way for projects like Adara at Otay Ranch. Approved in June, the project would place more than 1,100 homes in foothills that have burned every seven years on average since 1950.

FIRES IN ADARA AT OTAY RANCH AREA SINCE 1950

Developers argue the homes will be built to the latest fire code standards and surrounded by land stripped of fire-fueling brush. State law requires developers to prepare an evacuation plan demonstrating how residents will be able to get out.

"California has certainly seen a number of devastating fires, primarily in communities built long ago," said Borre Winckel, president of the Building Industry Association (BIA) of San Diego. "Our fire-mitigating development standards and building codes have necessarily evolved."

However, recent severe, wind-driven fires have raised questions about the limits of fire safe construction.

"You can have the most fire safe community on the planet. When a fire is coming through at a thousand degrees or more, I don't care what you've done to your house," said Char Miller, a professor of environmental history at Pomona College.

In 2008, California passed a set of stringent building codes for high fire hazard areas. In last year's deadly Camp Fire, nearly half the homes built after 2008 burned anyway. Miller said building homes this way is a smart thing to do, but it presents a problem: "It's also a way by which people fool themselves that if doing this, you will be OK."

The number of homes commingling with wilderness is expanding across the country. One in three homes in the U.S. now are in areas at increased risk of fire. The more people living in these areas, the more likely a fire will break out, said Alexandra Syphard, a fire ecologist for the Conservation Biology Institute.

"In an area with very few people, you have very few fires, because people cause all the fires," she said.

Even in areas with ample housing, local decision-makers face pressures.

"Every city hall and every county supervisor knows that one of the tickets to their political success is to greenlight development because the developers are the key factors in funding their campaigns," Miller said.

Van Collinsworth, a former firefighter with the U.S. Forest Service, checks the proposed layout of Fanita Ranch, a development in Santee, California. Fanita Ranch had gone back and forth between planning and legal battles for about a decade. It initially was approved in 2007, but its environmental impact reports were declared inadequate in 2013. (Kailey Broussard/News21)

Developers and real estate interests often donate liberally during election years, and local politicians often take money from builders whose projects hinge on their approval.

When a developer is in a position to make a billion dollars or more from a single project, there is little limit to what they're willing to spend, said Stephen Houlahan, vice mayor of the San Diego suburb of Santee. "There are dark-money forces, through political action committees, that do become involved in elections on behalf of their interests."

The BIA of San Diego spent at least $76,000 in support of Santee's council members last election. HomeFed Corp., a BIA member, is proposing a nearly 3,000-home project in the hills above Santee – the hills that were scorched in the 2003 Cedar Fire.

"Facts are facts, science is science, and the science says that that place is going to burn," said Houlahan, who opposes the project. "Everyone who's grown up in this city knows it."

Nonetheless, the project would be a financial gift for Santee, delivering a recurring tax windfall of $5 million, according to a report by a consulting group hired by the city.

The prospect of additional tax revenue is a common incentive for cities to approve more housing, according to Gregory Simon, an expert in human-environment interactions at the University of Colorado Denver.

"Why does the fire rage on and become so costly and injurious and even deadly? That's almost always a social thing," Simon said. "That's because all of our stuff is there. That's really the problem, and so we really should be questioning that in the first place."

A recent report from Gov. Gavin Newsom said California should "deprioritize" new development in areas that burn. Three in four Californians now say the government should restrict development in high-risk areas, according to a Berkeley Institute of Governmental Studies poll released in June. But no laws have been passed to keep homes out of harm's way.

Residents of Elfin Forest and Harmony Grove, California, participate in an egg toss during the towns' 42nd annual Fourth of July parade and picnic. (Kailey Broussard/News21)

Homemade signs are a tongue-in-cheek nod to years of tension among Elfin Forest, Harmony Grove and other rural communities in San Diego County. (Kailey Broussard/News21)

The communities of Elfin Forest and Harmony Grove are suing the county over Harmony Grove Village South and another housing project that together would add more than 700 homes along their eastern escape route. Dense development on the western side of the valley led to major backups during the Cocos Fire five years ago.

"People were stuck for an hour sitting in traffic because you had all the side streets coming out into the main street and they were all backed up," Theberge said. "That raised a lot of concerns about how viable is evacuating in a fire situation."

Mitchell has thought about where she'd go if Harmony Grove Village South is built, but she's counting on the lawsuit to stop the project.

"I think the only thing in our favor is that last year was such a terrible fire with the Paradise Fire," she said. "We really need a heads-up of a sane way of handling fire safety and not building in these areas that are so close to natural habitat."

The hills of Santee overlook Weston, a housing development approved by San Diego in 2013. Longtime fireman Van Collinsworth said the houses' close proximity to one another pose a fire risk. "If one ignites, another is likely to ignite," he said. (Kailey Broussard/News21)

South Carolina: High stakes in the Lowcountry

In Charleston, a booming manufacturing and tech economy has transformed the city from a Civil War tourist destination into a sprawling coastal metropolis. Twenty-six people move there every day.

The city's boundaries have grown beyond its historic peninsula. Over the past few decades, development has filled in the low-lying wetlands. Johns Island, a historically rural area west of downtown, is the latest front.

"I'd say the past six to eight years, things have really been changing," said Dolores Payne, a longtime resident of Johns Island.

Payne's parents once owned nearly 50 acres surrounding the plot where her tall house sits among century-old oak trees draped with Spanish moss. In 1958, they sold most of the marsh that couldn't be farmed and kept 5 acres of the highest ground, where Payne still lives.

Dolores Payne stands on land once owned by her parents on Johns Island, South Carolina. The low-lying marshes and trees are being replaced with fill dirt and rows of suburban homes. She still lives in the home her parents built, which is surrounded by ancient oaks. (Ellen O'Brien/News21)

Now, the ancient trees and open space that once distinguished her family's former property are no more. The lowland has been annexed into the city, which allows higher density development. Lush woodlands already have been razed.

The project, named Stonoview for its proximity to the Stono River, will include nearly 400 homes when complete. Johns Island residents have opposed such dense developments out of fear that they will worsen the flooding.

Like many coastal cities, Charleston can flood even in high tides. Known as the Lowcountry, the area has experienced more intense and more frequent flooding in the past several years: a 1,000-year flood in 2015 and hurricanes in the two years after.

For some, those disasters weren't entirely natural.

After getting flooded in three consecutive years, a church in the neighboring suburb of West Ashley funded a study of the region's watershed. The analysis revealed overdevelopment made flooding worse for people downstream. The culprit: storm runoff. Builders used fill dirt to raise new homes to the city's elevation requirement, but the artificial material doesn't absorb water like porous organic topsoil.

When the land is built on, it becomes impervious, said Norm Levine, geologist and director of the Lowcountry Hazards Center at the College of Charleston. "This can force water into other areas that were not originally having water problems."

Fill, which is composed mostly of crushed rock, sand and clay, allows developers to build homes on land that has long been considered too risky.

"The developers are pushing the envelope and really endangering whole areas," Charleston councilwoman Carol Jackson said.

The use of fill dirt in floodplains came under scrutiny after Hurricane Harvey inundated Houston neighborhoods. Nearly 400 homes in Harris County have been bought out, with 1,100 more recently approved.

In June, Charleston closed on a buyout of about 40 homes in West Ashley and plans to turn the land into greenspace.

Charleston, South Carolina, this summer bought out about 40 townhomes in the neighborhood of West Ashley. The area has flooded multiple times in recent years; the city plans to turn the land into greenspace. (Ellen O'Brien/News21)

"Unfortunately, we can't go back and change the past," said Mark Wilbert, Charleston's chief resilience officer. "We didn't have the science and we didn't have the engineering technology that we have today ... but going forward, we really need to make sure we don't make mistakes."

The National Oceanic and Atmospheric Administration recommends coastal communities require a permit to use fill dirt. Many coastal counties do, including Charleston County. But the city of Charleston doesn't.

"We've had a foot of sea-level rise in the last hundred years. Of that sea-level rise, half of that has occurred pretty much in the last 25," Levine said. "There are a lot of rules, laws, regulations that now need to be looked at and understood with this new paradigm of sea level built into them."

Other Atlantic Coast cities share Charleston's sea-level predicament. According to data analyzed by Climate Central, the 25 most vulnerable U.S. cities are on the Atlantic, with most of them in Florida.

But flood maps from the Federal Emergency Management Agency don't account for rising seas. And the agency's National Flood Insurance Program offers cheaper insurance to those who live in floodplains, which critics argue incentivizes building homes in flood-prone areas.

The Stonoview development is one of many in Charleston, South Carolina's fast-growing suburbs that used fill dirt to elevate

homes above the floodplain. (Ellen O'Brien/News21)

"Emphasizing affordability has led to premium rates that in many cases do not reflect the full risk of loss and produce insufficient premiums to pay for claims," said a Government Accountability Office report released in March. "In turn, this has transferred some of the financial burden of flood risk from individual property owners to taxpayers as a whole."

Federal privacy laws make it difficult for new homebuyers to know the full flooding history of their house. Newcomers flocking to Charleston, Johns Island resident Rich Thomas said, could be unaware that "what they've just bought into is a very artificial environment that's been created by the developers and encouraged by the city that ultimately is going to fail them."

A report released in July from Climate Central found homes in coastal states are being built on land vulnerable to rising sea levels at faster rates than those built on safe land. Charleston is one of 24 cities that have allowed at least 100 homes to be built in at-risk zones since 2010.

There's little the city can do to ensure developers are building homes that can withstand disasters of the future. State law allows property holders to do with their land as they want as long as they follow building and zoning laws.

"Once the house is sold, [the builders] are out of the equation. When the cost comes along, who's paying it? The homeowners through their deductible and their insurance company," said Chapman-Henderson, president of FLASH.

Charleston will release new regulations for development in the coming months, but projects approved beforehand, including the 240-home River Run project on Johns Island, can continue to follow the old rules.

"Forget about the fact that that area holds water when we get serious rainstorms and tropical storms," said Dustan, the sea-level expert. "Forget about the fact that we're very vulnerable to storm surge. They don't seem to give a rip about that at all."

"When you grew up as a child in this environment, it's like your church," said Dolores Payne, who lives on Johns Island, South Carolina. "And when they come in with this heavy equipment and take it down. ... I cannot describe the pain because it's senseless. They don't have to do that." (Ellen O'Brien/News21)

Johns Island residents continue to challenge development at City Council meetings, hoping their community won't become the new West Ashley.

Payne intends to stay on the land where she grew up, despite the Stonoview development along her property line.

"I will never leave," she said. "Even if I'm the last oasis in this neighborhood, I will be the last. They'll say, 'That crazy old lady with those oak trees.' I'm not going anywhere."

News21 reporters Kailey Broussard and Ellen O'Brien contributed to this report.

Kailey Broussard is a Donald W. Reynolds Foundation Fellow, Anna Huntsman is a Diane Laney Fitzpatrick Fellow, and Ellen O'Brien is an Ethics and Excellence in Journalism Foundation Fellow.

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