Appendix O3. Water Supply Assessment

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FANITA RANCH WATER SUPPLY ASSESSMENT

FOR THE

PADRE DAM MUNICIPAL WATER DISTRICT

PDMWD JN: 204020
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Final – February 4, 2020

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Acronym List

Acronym	Term
AAD	average annual demand
ac-ft	acre-feet
ACP	asbestos cement pipe
ADD	average day demand
AFY	acre-feet per year
Amendment	General Plan Amendment
Assessment	Water Supply Assessment
AWP	Advanced Water Purification
BDCP	Bay Delta Conservation Plan
CALGreen	California Green Building Standards Code
CALTRANS	California Department of Transportation
CAWCD	Central Arizona Water Conservation District
CCP	concrete cylinder pipeline
CDFW	California Department of Fish and Wildlife
CEF	Capital Expansion Fund
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
CRA	Colorado River Aqueduct
CRF	Capital Replacement Fund
CVP	Central Valley Project
CWEA	California Water Environment Association
District	Padre Dam Municipal Water District
DWR	California Department of Water Resources
ECAWP	East County Advanced Water Purification
ESA	Eastern Service Area
GHG	Greenhouse Gas Emissions
gpcd	gallons per capita day
gpd	gallons per day
ICS	Intentionally Created Surplus
IID	Imperial Irrigation District
IRP	Integrated Water Resources Plan
IRWM	Integrated Regional Water Management
MAF	million acre-feet
Master Plan	2015 Comprehensive Facilities Master Plan
Metropolitan	Metropolitan Water District of Southern California
MG	million gallons
MGD	million gallons per day
NEPA	National Environmental Policy Act

Acronym List

Acronym	Term
NMFS	National Marine Fisheries Services
NPDES	National Pollutant Discharge Elimination System
PD	Planned Development
PEIR	Program Environmental Impact Report
Project	Fanita Ranch Development
PVC	polyvinyl chloride
QMCP	Quagga Mussel Control Program
RPAs	"reasonable and prudent alternatives"
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB 221	Senate Bill 221
SB 610	Senate Bill 610
SCAG	Southern California Association of Governments
SDCWA	San Diego County Water Authority
SNWA	Southern Nevada Water Authority
SP	Specific Plan
Specific Plan	Fanita Ranch Specific Plan
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
USACE	U.S Army Corps of Engineers
USBR	United States Department of the Interior, Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
WAS	Water Agency Standards
WRF	Ray Stoyer Water Recycling Facility
WSV	Water Supply Verification

Section 1 - Purpose

Water Code sections 10910 et seq., commonly referred to as Senate Bill 610 (SB 610), requires the preparation of a Water Supply Assessment (Assessment) for certain new development projects. (See Water Code §§ 10910(a), 10912.) As stated in SB 610, the purpose of an Assessment is to determine whether the "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." Water Code section 10910 states that a "project," as defined in Water Code section 10912 and subject to the California Environmental Quality Act (CEQA), requires the preparation of an Assessment. Under Water Code Section 10912(a)(7), the definition of a "project" includes one "…that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project." Because the proposed revised Fanita Ranch Development (Project) exceeds the minimum threshold of 500 dwelling units, an Assessment is required. The City of Santee has determined that the Project is subject to CEQA. And, as the lead agency under CEQA, the City of Santee has identified Padre Dam Municipal Water District (District) as the public water system that will serve the Project and has requested that the District prepare an Assessment for the Project in compliance with SB 610.

The Urban Water Management Planning Act, Water Code section 10610 et seq., requires urban water suppliers in California providing water for municipal purposes directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an Urban Water Management Plan (UWMP) at least once every five years.[1] Among other things, the UWMP evaluates current and future water supplies and demands within a supplier's service area during normal, single-dry, and multiple-dry year periods over the next 20-year planning horizon and beyond, water supply reliability, water conservation measures, and water shortage contingency planning. Cities, counties, water districts, property owners, and developers utilize the UWMP for their long-range water supply planning, including the preparation of Assessments.

A UWMP is submitted to the California Department of Water Resources (DWR) for review to ensure requirements in the California Water Code have been addressed and acknowledged. The District's 2015 UWMP was adopted on June 15, 2016 in accordance with the requirements of the Urban Water Management Planning Act. Notices of public hearing were submitted to DWR and cities and counties within the District's service area, including the City of Santee, prior to the adoption of the UWMP.

The purpose of this Assessment is to evaluate water supplies that are, or will be, available during normal, single dry year, and multiple dry years, during a 20-year projection, and determine if the available water supplies will meet existing, projected, and future water demands served by the District,

[1] California Water Code Division 6, Part 2.6 Urban Water Management Planning, Sections 10610-10656.

including the proposed Project. This Assessment evaluates the availability of sufficient water supplies for the Project and does not constitute approval of the Project nor does it create a right or entitlement to water service or any specific level of water service. In addition, this Assessment identifies existing water supply entitlements, water rights, water service contracts, and agreements relevant to serving the Project.

Michael Baker International prepared this Assessment for the District in compliance with SB 610.

Section 2 - Findings

2.1 Summary

The District prepared a 2015 Comprehensive Facilities Master Plan (Master Plan) and Program Environmental Impact Report (PEIR) both of which were approved by the District Board in May 2017. The Master Plan developed a capital improvement plan to guide the District in the planning, development, and budgeting for water and recycled water system improvements that would be necessary to meet system performance criteria and support growth within the District through 2040 (Carollo 2015). At the time of the preparation of the Master Plan, the planning information for the current Project was based on a prior Fanita Ranch Specific Plan (Boyle 2007), which assumed a total potable water demand of 0.75 million gallons per day (MGD), or 840 AFY, and a recycled water demand of 0.60 MGD, or 671 AFY, for a total demand of 1,511 AFY. The District's 2015 UWMP accounted for the potable demand of 840 AFY associated with the Project, but it did not account for the additional 671 AFY of recycled demand (Padre Dam 2015 UWMP). Therefore, this Assessment incorporates only the 840 AFY Project demand that is accounted for in the 2015 UWMP and will additionally determine whether the additional, updated Project water demand, beyond the 840 AFY already accounted for in the District's 2015 UWMP, all of which is now potable demand because recycled water is not available for this Project, can be supplied by the District's total projected available water supplies under the normal, single dry year, and multiple dry water year scenarios in addition to the District's existing and planned future uses, including potable and manufacturing and agricultural uses.

During planning of the Project, an updated Fanita Ranch Specific Plan (Specific Plan) was developed to provide planning policies and regulations, combine zoning regulations, capital improvement programs, detailed development regulations, and other regulatory requirements into one document, all of which are designed to meet the needs of a specific area (City of Santee 2019). As noted within the Specific Plan, "it provides an opportunity to balance the City's need for diverse housing types and high-quality amenities, while restoring and preserving sensitive habitat areas. The Specific Plan provides guidance to ensure development occurs thoughtfully, responsibly, and equitably." This Assessment utilizes information contained within the Specific Plan relating to projected population, number of residential units, and unit densities, coupled with District water planning criteria, to determine the projected total water demand for the Project. The current projected potable water demand is 1.444 MGD, or 1,618 AFY. This projected water demand is 107 AFY more than the 1,511 AFY demand previously estimated by Boyle (2007). Section 3 of this report provides more information regarding the calculations and methodology used to prepare the water demand projections. Because the District's 2015 UWMP only accounts for 840 AFY of the Project's total projected demand of 1,618 AFY over the 20-year planning horizon, this Assessment evaluates the additional 778 AFY demand associated with the Project and concludes the additional demand can be met by water supplied by San Diego County Water Authority (SDCWA or Water Authority). Specifically, SDCWA has confirmed that it can meet the additional demand associated with the Project through the use of the Accelerated Forecasted Growth component of its 2015 UWMP. The District is also planning and developing a regional drought-proof water supply known as the East County Advanced Water Purification (ECAWP) Program, which could decrease the

District's reliance on imported water supplies and improve water supply reliability. But the ECAWP is not necessary for the District to meet the demand associated with the Project.

Total Water Demand Calculation

Annual Water Demand = (1,444,168 gal/day [Table 3-2] x 365 days/year) / (43,560 sq ft/acre) x 7.48 gal/cu ft)

= 1,618 AFY

The Project's projected potable water demand is 1,618 AFY. The District's overall water demand for 2040 is 16,816 AFY (14,800 AFY potable and 2,016 AFY recycled) or 15 MGD. Per section 3.1.6.1 of the Master Plan (Carollo 2015), only 0.75 MGD (840 AFY) of Project demand is accounted for in the 2040 projections for the District in its 2015 UWMP. Therefore, the District's 2015 UWMP Table 4-3 currently only accounts for 52% of the Project's calculated demand. The Project's accounted-for demand of 840 AFY is 5.0% of the District's total potable demand for the year 2040. The Project's total potable demand of 1,618 AFY would be approximately 9.6% of the District's adjusted potable water demand of 15,578AFY (14,800 AFY + 778 AFY) per the 2015 UWMP.

Available Potable Water Supplies

SDCWA has increased its local supplies by implementing the Carlsbad Desalination project and securing transfers of conserved water from the Imperial Irrigation District thorough 2047, reducing its reliance on imported water from Metropolitan. (SDCWA 2018 Annual Report, Diversification & Conservation, Agency Locks Up Long-Term Deliveries of Conserved Irrigation Water.) As of May 2019, the Carlsbad Desalination plant received approval to increase capacity from 50 MGD to 60 MGD, an increase of 10 MGD or 11,000 AFY of additional potable supply not previously accounted for in the SDCWA 2015 UWMP. (See State Water Resources Control Board's May 8, 2019 Media Release, "Carlsbad Desalination Plant Updated Permit Approved by San Diego Water Board, available at https://www.waterboards.ca.gov/press_room/press_releases/2019/desal_press_release_05082019_fnl fnl.pdf.) The SDCWA 2015 UWMP projects that the potential increased capacity from the Carlsbad Desalination Plant could be placed into service prior to 2025. (Section 4.5.) These sources will enhance SDCWA's supply diversification during the single and multiple dry years where a deficit was previously anticipated for a single dry year beginning in 2035 and in multiple dry years beginning in 2028 in the SDCWA 2015 UWMP. Additionally, according to SDCWA's 2018 Annual Report, SDCWA has lowered its long-term regional water-use projections due to sustained water-use efficiency throughout the region, resulting in an interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon in comparison with the 2015 UWMP. (SDCWA 2018 Annual Report, Diversification & Conservation, Demand Forecast Declines Due to Regional Efficiencies.) Due to Accelerated Forecasted Growth availability, SDCWA can supply the previously unaccounted for demand associated with the Fanita Ranch Project. Specifically, SDCWA has confirmed that it can meet the

additional 778 AFY associated with the Fanita Ranch Project through the use of Accelerated Forecasted Growth. (See request by District and SDCWA's response, attached as Appendix A.)

Although not a necessary supply source to serve Fanita Ranch, the District is planning to further enhance its potable water supply and reliability by implementing the ECAWP to reduce the area's reliance on imported water from the SDCWA. Implementation of the ECAWP, discussed in Section 5.3, will potentially offset 30% of imported supplies by the end of 2025. Furthermore, due to ongoing water conservation efforts, historic water demands within the District have experienced a 25% reduction compared to pre-conservation historic water demands on a per capita basis as documented in the District's 2015 UWMP. **As demonstrated in Sections 5, 6, and 7 of this Assessment, the District has sufficient water capacity to supply the Project's estimated total water demand.**

2.2 Conclusion

SDCWA's 2015 UWMP states: "If Metropolitan, the Water Authority and member agency supplies are maintained and developed as planned, along with achievement of the additional water conservation, no shortages are anticipated within the Water Authority's service area in a normal year through 2040." (SDCWA 2015 UWMP, Section 9.2.) With a very conservative assumption regarding limited Metropolitan supplies during a single dry water year, and assuming Water Authority and member agency supplies are maintained and developed as planned, along with achievement of the additional conservation target, no shortages are anticipated within the Water Authority's service area in a single dry year until 2035, provided carryover storage supplies are utilized. (SDCWA 2015 UWMP Section 9.) More significant shortages are anticipated during multiple dry water year events beginning in 2028, provided carryover storage supplies are utilized. (SDCWA 2015 UWMP Section 9.) Although there are shortages anticipated during single dry years beginning in 2035 and in multiple dry years beginning in 2028, SDCWA maintains that these shortages can be mitigated through extraordinary water conservation actions and dry-year transfers, which SDCWA successfully acquired and used during the 2007-2011 shortage period. (SDCWA 2015 UWMP Section 9.3.) The District can address the shortfalls identified in its 2015 UWMP through the implementation of measures identified in section 8 of its 2015 UWMP: Water Shortage Contingency Planning. (District's 2015 UWMP, section 7.3.) Further, the shortfalls identified in the SDCWA 2015 UWMP and the District's 2015 UWMP will be mitigated by the interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon identified in the 2018 SDCWA Annual Report in comparison with the SDCWA 2015 UWMP as well as the potential increase of output at the Carlsbad Desalination Project, which could be placed into service prior to 2025. Additionally, the completion of the ECAWP project, if implemented, will reduce the District's reliance on imported supplies, and the District will continue to pursue its implementation to address uncertainties and improve water reliability.

This Assessment confirms that the projected water demand associated with the Project falls within the water demand forecasts and available water supplies as described in the UWMPs prepared by (1) Metropolitan, (2) SDCWA, which includes the District's projected demands from its 2015 UWMP as well as forecasted growth in residential housing development, and (3) the District; provided mitigation

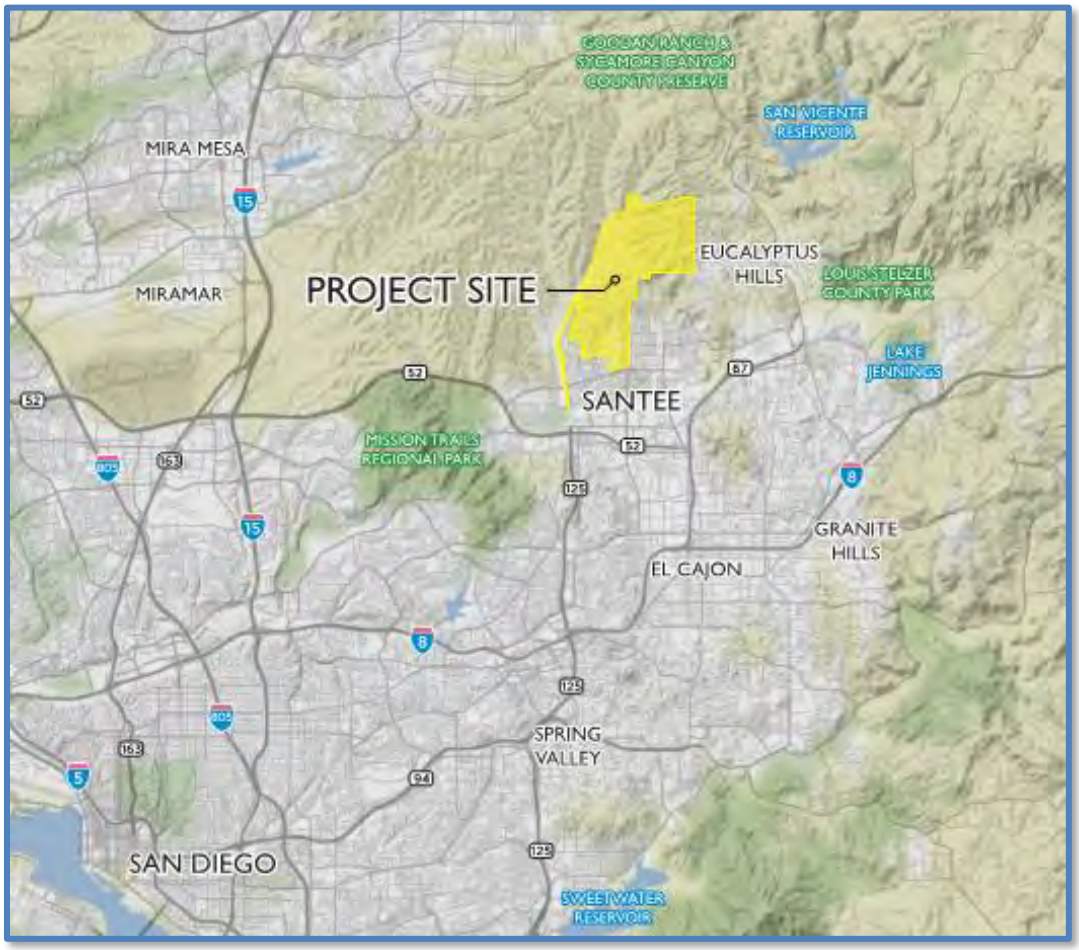
measures are employed in dry years, and with Accelerated Forecasted Growth availability that has been specifically allocated to the Project to supply its previously unaccounted-for demand. The region-wide demand reduction identified in the 2018 SDCWA Annual Report and potential increased output from the Carlsbad Desalination Project, which could be placed into service prior to 2025, will further increase SDCWA supply reliability. Water supplies necessary to serve the Project and existing and future water demands within the District's service area, as well as the actions necessary to develop or supplement supplies, have been identified in the water supply planning documents of the District, SDCWA, and Metropolitan as referenced herein.

Section 3 - Project Description

3.1 Project Location

The Fanita Ranch Project site consists of approximately 2,638 acres in the northern portion of the City of Santee (City) in eastern San Diego County. The City is located approximately 18 miles east of downtown San Diego and the Pacific Ocean. The Project site is north of State Route (SR) 52 and west of SR-67 (See Figure 3-1– Project Site Location Map). Access to the Project site will be provided by the northerly extension of Fanita Parkway and Cuyamaca Street and the extension of Magnolia Avenue to Cuyamaca Street. The Project site is bordered by Marine Corps Air Station Miramar and District facilities and Santee Lakes Recreation Preserve to the west; open space/recreational areas, including Goodan Ranch Regional Park and Sycamore Canyon County Preserve, to the north and west; existing City residential neighborhoods to the south; and Eucalyptus Hills, an existing residential community, to the east.

Figure 3-1
Project Site Location Map



3.2 Project History

The Project site has been subject to environmental review and land use planning for the past 40 years. Prior to the current Project, the most recent application for development on the project site was filed in 2005. At that time, a Tentative Map and Development Review Permit application was submitted to build four villages containing 1,380 single-family dwelling units, 15 live-work units, commercial and mixed use space, parks, and open space. The Santee City Council certified the Final Environmental Impact Report ("EIR") under CEQA and approved the prior project in 2007.

From 2008 through 2012, the approvals were subject to litigation. Ultimately, portions of the 2007 EIR related to biological resources and water supply, as well as a Revised EIR on the single issue of fire safety adopted by the City in 2009, were found inadequate. (See *Preserve Wild Santee, et al. v. City of Santee, et al.* (2012) 210 Cal.App.4th 260; *Preserve Wild Santee, et al. v. City of Santee, et al.,* San Diego Superior Court Case No. 37-2009-00097042-CU-TT-CTL.) In 2013, the City set aside the certification of the 2007 EIR and 2009 Revised EIR and vacated related project approvals.

In August 2018, the current owner of the property, HomeFed Fanita Rancho, LLC and JWO Land, LLC, a wholly owned subsidiary of HomeFed Fanita Rancho, LLC (HomeFed), submitted a complete application that modifies the project. On November 5, 2018, the City issued a Notice of Preparation for a Revised EIR fully evaluating the modified Project while also addressing any applicable portions of the prior environmental analysis for the project approved in 2007 that were found inadequate. The Revised EIR will evaluate all potential impact areas under CEQA for the modified Project and will not be limited to those areas found inadequate for the project approval in 2007.

An updated Specific Plan, Public Review Draft, dated February 2020, has also been prepared for the Project. The Specific Plan contains objectives for Fanita Ranch, specific land use plans and descriptions, and development standards the Project must meet. It also discusses specific neighborhood plans, commercial and recreational uses, infrastructure designs and requirements, and financial benefits for the City.

3.3 Fanita Ranch Project

Fanita Ranch is a master planned community consisting of up to 2,949 homes[2], up to 80,000 square feet of commercial uses, a school site, parks, open space and agricultural uses. (See Figure 3 – Site Utilization Plan and Table 1 - Site Utilization Plan Statistical Summary.) The Fanita Ranch Specific Plan preserves more than 60 percent of the Project site as a permanent Habitat Preserve (approximately 1,650.4 acres). Development is clustered within three villages: Fanita Commons, Orchard Village and Vineyard Village. Each village is defined by its unique design theme, location, physical characteristics and mix of housing types and land uses. In addition to the villages, the Specific Plan includes a 31.9-acre Special Use Area

[2] If the school site is not utilized for school purposes, the school site may be developed with residential uses and the total authorized units would be increased to 3,008 homes.

located in the southwest portion of the Project site. The Specific Plan provides approximately 78.0 acres of public and private parks distributed throughout the three villages, including the 31.2-acre community park, 30.4 acres of neighborhood parks and approximately 16.4 acres of mini-parks and paseos. The farm is approximately 27.3 acres, with an additional 10.9 acres of open space with an agricultural overlay. Approximately 256.0 acres of open space, outside of the Habitat Preserve, includes manufactured open space slopes, fuel modification areas, trails, water quality/hydromodification basins, pump stations and water tanks.

Table 3-1 summarizes the phasing of the proposed Project by dwelling units and area, respectively.

Figure 3-2 displays the Project site layout, including the Project boundary, residential areas and new roadways. Figure 3-3 illustrates the phase sequencing to fully construct and develop the Project site.

Table 3-1
Proposed Project Summary by Phase (Dwelling Units, DU)

Dwelling Units by Phase[1]	Phase 1	Phase 2	Phase 3	Phase 4	Total
Single Family Residential	187	267	451	298	**1,203**
Multi-Family Residential[2]	138	289	61	437	**925**
Village Center Residential	339	17	0	79	**435**
Active Adult Residential	445	0	0	0	**445**
Total					**3,008**

Notes:
1. All values and phasing information derived from the Fanita Ranch Specific Plan (Public Review Draft, dated February 2020).
2. Phase 1 accounts for an additional 59 dwelling units that could be built if the school site is not acquired for a public or private school within 2 years of the filing of the final Vesting Tentative Map for the phase in which the site is located.

Each village/development area and key Project components are summarized below.

Fanita Commons

Fanita Commons is in the northwest portion of the project site and is planned as the primary activity center for Fanita Ranch. Fanita Commons includes a mixed-use village center, an active-adult neighborhood, a K-8 school site, a community park, a working farm and two preserved natural drainages with an adjoining linear park. With the farm as its focal point, orchards, vineyards, fields and a barn for community events define this village. The mixed-use village center allows for up to 40,000 square feet of commercial uses and residential, recreation and civic uses, including a site for a new City fire station. The Project's preferred land use plan includes a School Overlay land use designation that would reserve a school site for a potential K–8th grade public or private school on approximately 15 acres. If acquired by the Santee School District, the site would accommodate up to 700 students, including existing students and new students. If the Santee School District does not acquire the school site, the underlying Medium Density Residential (MDR) land use designation may be implemented. In that case, the maximum total number of units permitted in the Specific Plan would increase by 59 units for a total of

3,008 units. This Assessment assumes a water demand associated with 3,008 units, which is greater than the demand associated with the school, and is thus a more conservative demand calculation. Fanita Commons includes a total of 768 residential units, including 445 Active Adult homes, and 323 homes within the mixed-use village center.

Orchard Village

The Orchard Village is located south of Fanita Commons and consists of residential land uses, neighborhood and mini-parks and a centrally located mixed-use village center. The Orchard Village provides a total of 855 residential units, including 454 Low Density Residential (LDR) homes, 368 MDR homes and 33 homes within the mixed-use village center. Open space and a linear riparian area geographically and topographically separate the Orchard Village from Fanita Commons. Roadways, trails and a pedestrian bridge connect the Orchard Village to Fanita Commons. A neighborhood-serving village center includes up to 10,000 square-feet of retail, office and commercial uses. The Orchard Village also includes neighborhood parks and min-parks.

Vineyard Village

The Vineyard Village is in the northeastern portion of the Project site. The Vineyard Village is separated from the other two villages by an open space/wildlife corridor within the Habitat Preserve. Two local streets connect the Vineyard Village to Fanita Commons and the Orchard Village. The Vineyard Village provides a total of 1,326 residential units including 749 LDR homes, 498 MDR homes, and 79 homes within the mixed-use village center. The neighborhood-serving village center includes up to 10,000 square feet of retail and office uses. The Vineyard Village also features agricultural land planned for vineyards, as well as neighborhood parks and mini-parks.

Habitat Preserve

The Habitat Preserve is comprised of approximately 1,650.4 acres of permanently preserved open space. Open space within the Habitat Preserve will be dedicated to the Santee Multiple Species Conservation Program (MSCP) Subarea Plan Preserve currently being prepared by the City of Santee to ensure permanent preservation and management. A Habitat Management Plan will be adopted for the Habitat Preserve to direct the long-term management of biological resources and meet the requirements of the MSCP Subarea Plan. A trail system through the Habitat Preserve will be designed to provide public access, consistent with the MSCP Subarea Plan.

The Farm

The Farm is the community focal point for Fanita Ranch. The approximately 27.3-acre Farm is located along the eastern edge of Fanita Commons and the Orchard Village, near the center of Fanita Ranch. An event barn featuring iconic agrarian architecture will set the theme for the community and provide a venue for special events and farming operations. The working Farm is planned to include terraced vegetable fields, pasture lands, limited housing for employees, raised gardens, limited animal keeping and up to 20,000 square feet of commercial uses. A Community Supported Agriculture program is planned for the Farm. Food grown on the Farm may be distributed to local schools, restaurants and other institutional facilities such as the congregate care and assisted living facilities. Agricultural uses have an underlying open space (OS) land use designation in the Specific Plan. The "Agricultural Overlay" provides details regarding permitted agricultural uses.

Special Use Area

The Special Use area is comprised of approximately 31.9 acres in the south portion of the Project site. Potential uses may include a solar farm, recreational vehicle and boat storage, above ground agriculture, such as greenhouses or similar uses. A Mini Park (MP-31) is planned west of Carlton Hills Boulevard which is planned to include a trail staging and parking area. Access to the Special Use Area is provided via Carlton Hills Boulevard.

Parks, Trails and Recreational Facilities

The Fanita Ranch Project includes a coordinated system of parks and non-motorized use trails that connect to the three villages, regional trails and surrounding open space areas, including the Habitat Preserve. The trail system connects to existing off-site trails in Sycamore Canyon County Preserve, Goodan Ranch Regional Park, Mission Trails Regional Park and Santee Lakes Recreation Preserve. Approximately 78.0 acres of public and private parks are distributed throughout the three villages. The Community Park, located in Fanita Commons, provides for both active and passive recreation opportunities. Neighborhood parks are planned in key locations to provide recreational opportunities within walking distance of all homes. Mini-parks may feature trail heads, overlooks and passive and active recreational opportunities. A series of trails and paths ("AgMeander") connect the Farm to the Fanita Ranch villages

Mobility (on-site)

The Fanita Ranch Specific Plan establishes an on-site roadway network and street cross sections designed as a system of complete streets that support motorists, pedestrians, bicyclists and transit users. On-site streets are generally two lanes and include traffic calming measures such as gateways, roundabouts, narrowed travel lanes, on-street bike facilities and parking, a chicane, raised crosswalks and intersection pop-outs. On-site streets that cross open space areas are designed to minimize impacts to sensitive habitat and to accommodate wildlife crossings.

Mobility Improvements

Mobility improvements include the extension of three roadways identified in the Santee General Plan Mobility Element, including: 1) Fanita Parkway improvements from Mast Boulevard to the current northern limit; 2) Cuyamaca Street improvements from Mast Boulevard to the current northern limit; 3) the extension of Fanita Parkway from Ganley Road through the project site; 4) the extension of Cuyamaca Street from north of Chaparral Drive through the project site; and 5) the extension of Magnolia Avenue from its current northern limit to Cuyamaca Street.

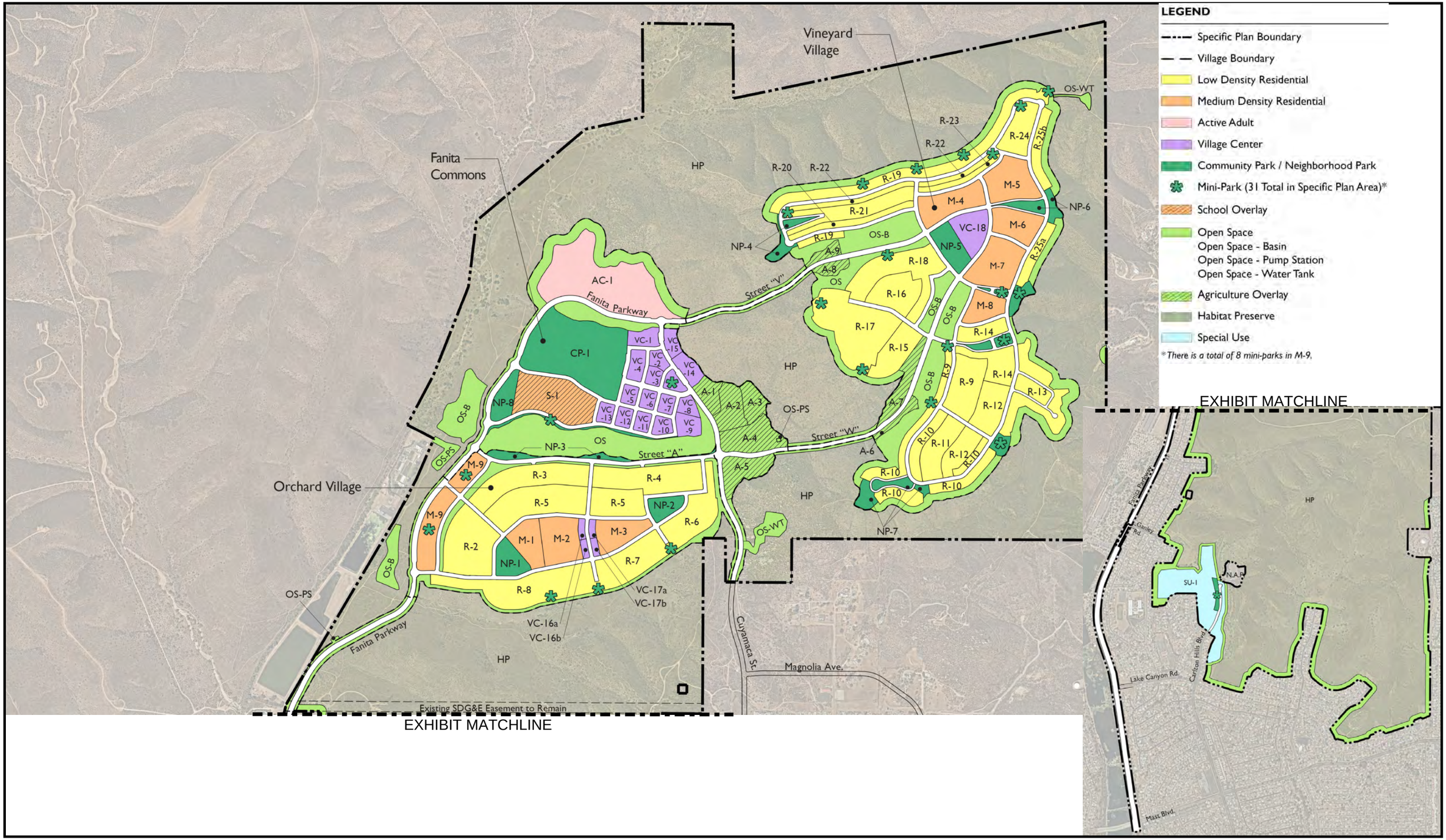
Development Phasing

Fanita Ranch is anticipated to be developed in four phases over a 10 to 15-year period. Phases may overlap or vary depending on market conditions and may be broken down into smaller sub-phases. Construction is anticipated to begin in 2021. The Special Use Area is not tied to development phasing and may be developed anytime during Project build-out.

3.4 Discretionary Approvals

The Santee General Plan is prepared in accordance with State law as a comprehensive long range plan to serve as a guide for development of the City. The Santee General Plan designates land use categories for the City and identifies Fanita Ranch as a Planned Development (PD).

In August 2018, HomeFed submitted a complete application to the City of Santee that modifies the Fanita Ranch Project. The application includes a request for a General Plan Amendment (Amendment) to be processed concurrently with a Specific Plan to designate the Fanita Ranch project site with a Specific Plan (SP) land use designation and to ensure that the Fanita Ranch project is in compliance with the General Plan, as amended. The Project would also require a zone reclassification, development agreement, tentative subdivision map, and other discretionary approvals from the City, as well as various actions from other local, state and federal agencies, including but not limited to water and sewer availability plans from the District.

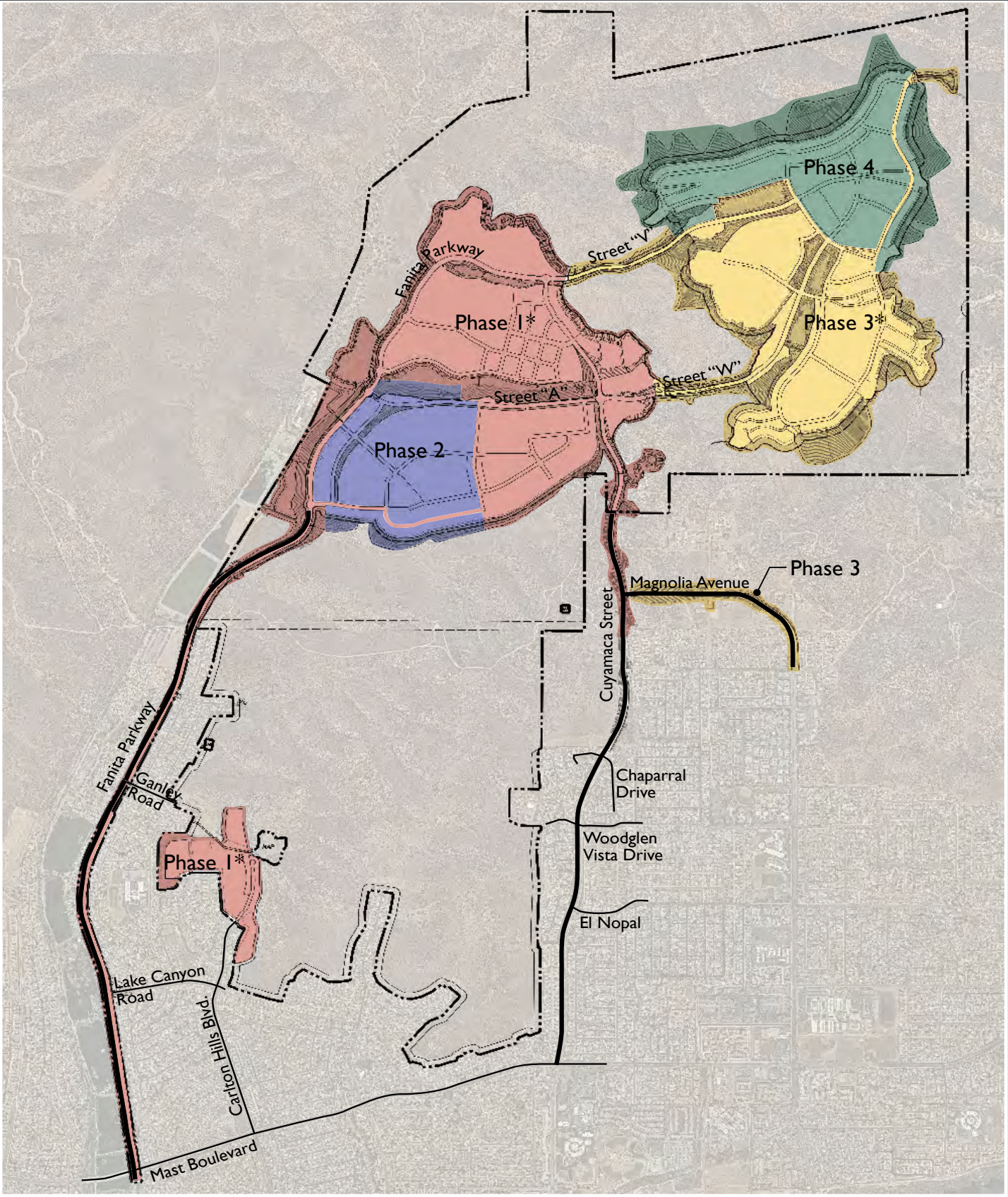


NOT TO SCALE

FANITA RANCH WATER SUPPLY ASSESSMENT

PROPOSED SITE LAYOUT AND LAND USE

Figure 3-2



Conceptual phasing shown only; subject to future phasing refinements.

** Phase 1 includes backbone water and sewer improvements. The balance of the Special Use area may be developed in Phase 1 or overtime. Phase 3 includes backbone water improvements.*

Michael Baker INTERNATIONAL

FANITA RANCH WASTEWATER STUDY

Project Phasing Plan

Figure 3-3

3.5 Water Demand

The Project water demand is based on land use, dwelling units, and District-defined unit demand factors. For water demand per residential land use area, the dwelling units are multiplied by a per capita water use factor of 100 gallons per capita per day (gpcd) obtained from the Master Plan and multiplied by the estimated number of persons per dwelling unit as defined in the Santee Municipal Code. For this study, each residential unit contains 3.4 capita per dwelling unit (DU) for low-density single-family homes and 3.1 capita per dwelling unit for medium-density multi-family homes.[3] We note that the capita per dwelling unit employed in this study are higher than the current U.S. Census average of 2.86 persons per household for the City of Santee; however, the use of the higher capita results in a more conservative estimate in water demand rates per dwelling unit. Commercial and irrigation water demands are calculated per Water Agencies' Standards (WAS) planning criteria based on land area type. The WAS is a compilation of common design guidelines for the planning and design of potable water, recycled water, raw water, and sewer facilities adopted by several public water agencies in San Diego County. WAS member agencies include Helix Water District, Lakeside Water District, Otay Water District, Padre Dam Municipal Water District, Ramona Municipal Water District, San Dieguito Water District, and Santa Fe Irrigation District. The land area types as specified in the Vesting Tentative Map and Specific Plan are as listed: Active Adult, Medium Density Residential, Low Density Residential, Village Center, Agriculture Farm, Mini Park, School Overlay,[4] and Community Park/Neighborhood Park. The estimated average day demand (ADD) calculations in gallons per day (gpd) are shown below:

Residential Sample Calculations

Village Center/ Active Adult (VC-1)	=	40 DU * 3.1 People/DU (Medium-Density Multi-Family Home, Specific Plan) *100 gpcd (Master Plan Section ES5.1)
ADD (VC-1)	**=**	**12,400 gpd**
Single Family (R-7)	=	50 DU * 3.4 People/DU (Low-Density Single-Family Home, Specific Plan) * 100 gpcd (Master Plan Section ES5.1)
ADD (R-7)	**=**	**17,000 gpd**

Commercial[5] Sample Calculations

Village Center (VC-9)	=	((2.73 acres * 40,000 square-feet) / 27.8 acres) / (43,560 sq ft/ac)
	=	0.09 acres

[3] SMC Section 12.04.070 and Fanita Ranch Specific Plan (Public Review Draft, dated February 2020), Section 7.2.

[4] If the reserved school site is not acquired for school use within 2 years of approval of the final map, then the area could be used as a Medium Density Residential land use increasing the dwelling units from 2,949 to 3,008 units.

[5] Mixed-Use commercial developments share a total amount of commercial square feet as provided in Table 3.2 of the Specific Plan. A factor for each commercial facility is calculated based on the facility's area. The factor is applied to the total commercial square footage to determine the actual commercial area applied to each commercial facility.

Total Water Demand = 0.09 acres * 5,000 gal/acre-day (WAS)
(ADD) = 450 gpd

Irrigation Sample Calculation

Mini Park (MP-1) = 1.59 acres * 3,000 gal/acre-day (WAS)
ADD (MP-1) = 4,770 gpd

Table 3-2 provides an updated summary of water demands for each land use area by phase. The Fire Station is assumed to always maintain a total number of eight staff in the facility. The water demand unit rate for residential land use is applied to the fire station to calculate its water usage rate. The Master Plan provides a table listing future developments within the City of Santee and associated demand factors. Water demands were calculated using area and dwelling unit values from the Specific Plan, Santee Municipal Code and Tentative Map as well as gpd conversion factors from WAS and the 2015 Master Plan.

Table 3-2
Projected Water Demands by Phase (gpd)

Type	Land Use	Phase 1	Phase 2	Phase 3	Phase 4	Subtotal
Residential	Active Adult	137,950	-	-	-	137,950
	Single Family	63,580	90,780	153,340	101,320	409,020
	Multi Family	42,780	89,590	18,910	135,470	286,750
	Village Center	105,890	5,270	-	24,490	135,650
					SUBTOTAL	**969,370**
Commercial	Agriculture	2,295	-	-	-	2,295
	Village Center	5,145	595	-	1,148	6,888
					SUBTOTAL	**9,183**
Irrigation	Agriculture	49,086	-	16,344.0	3,312.0	68,742
	Park	97,194	21,392.0	21,213.0	34,854.0	174,653
	Other	65,160	17,820.0	23,760.0	11,880.0	118,620
	FMZ and Basins	31,100	15,500.0	31,100.0	25,900.0	103,600
					SUBTOTAL	**465,615**
TOTAL		**600,180**	**240,947**	**264,667**	**338,374**	**1,444,168**

The values provided in Table 3-2 summarize the water demands projected for each phase of the Project. The total projected water for the entire site is 1.44 MGD or 1,618 AFY. Table 3-3 through Table 3-6 provide detailed water demand projections for each phase of the Project.

Table 3-3
Phase 1 – Fanita Commons & Orchard Village Water Demand Generation

Planning Area		Land Use	Area (Acres)[1]	No. Units	Total Commercial Area (SF)	Area Designated for Planning (Acres)[1,2,7]	Dwelling Units (DU)	Water Use (Gal/Acre-Day)[3]	Water Use per DU[4]	Total Water Demand (GPD)	
RESIDENTIAL	AC-1	Active Adult	31.00	1		31.00	445		310	137950	
	M-3	MDR	6.50	79		6.50	79		310	24490	
	M-S	MDR (S-1 Area)	15.00	59		15.00	59		310	18290	
	R-4	LDR 60' x 100' (56 units)	11.30	56		11.30	56		340	19040	
	R-5a	LDR 70' x 100' (28 units)	6.46	28		6.46	28		340	9520	
	R-6	LDR 50' x 100' (53 units)	9.07	53		9.07	53		340	18020	
	R-7	LDR 55' x 100' (50 units)	9.87	50		9.87	50		340	17000	
	VC-1	Village Center	2.59	39		2.59	39		310	12090	
	VC-2[6]	Village Center (Fire Station)	1.50	0		1.50	0		800	800	assume 8 pe
	VC-3	Village Center	1.37	17		1.37	17		310	5270	
	VC-4	Village Center	2.41	37		2.41	37		310	11470	
	VC-5	Village Center	1.47	17		1.47	17		310	5270	
	VC-6	Village Center	1.45	17		1.45	17		310	5270	
	VC-7	Village Center	1.47	17		1.47	17		310	5270	
	VC-8	Village Center	1.70	17		1.70	17		310	5270	
	VC-9	Village Center MF(MH)	2.73	40		2.73	40		310	12400	
	VC-10	Village Center	1.69	24		1.69	24		310	7440	
	VC-11	Village Center	1.51	20		1.51	20		310	6200	
	VC-12	Village Center	1.53	20		1.53	20		310	6200	
	VC-13	Village Center	1.55	20		1.55	20		310	6200	
	VC-14	Village Center	2.83	20		2.83	20		310	6200	
	VC-15	Village Center	1.92	18		1.92	18		310	5580	
	VC-17a	Village Center	0.64	8		0.64	8		310	2480	
	VC-17b	Village Center	0.63	8		0.63	8		310	2480	
	Subtotal					**118.19**	**1,109**			**350,200**	
COMMERCIAL[2]	A-1	Ag-Farm	3.39	1	2485	0.06		5000		285	
	A-2	Ag-Farm	5.68	1	4164	0.10		5000		478	
	A-3	Ag-Farm	3.77	1	2764	0.06		5000		317	
	A-4	Ag-Farm	8.18	1	5997	0.14		5000		688	
	A-5	Ag-Farm	6.25	1	4582	0.11		5000		526	
	VC-1	Village Center	2.59	1	3738	0.09		5000		429	
	VC-2[5]	Village Center (Fire Station)	1.50	1	2165	0.05		5000		249	
	VC-3	Village Center	1.37	1	1977	0.05		5000		227	
	VC-4	Village Center	2.41	1	3479	0.08		5000		399	
	VC-5	Village Center	1.47	1	2122	0.05		5000		244	
	VC-6	Village Center	1.45	1	2093	0.05		5000		240	
	VC-7	Village Center	1.47	1	2122	0.05		5000		244	
	VC-8	Village Center	1.70	1	2454	0.06		5000		282	
	VC-9	Village Center	2.73	1	3940	0.09		5000		452	
	VC-10	Village Center	1.69	1	2439	0.06		5000		280	
	VC-11	Village Center	1.51	1	2180	0.05		5000		250	
	VC-12	Village Center	1.53	1	2208	0.05		5000		253	
	VC-13	Village Center	1.55	1	2237	0.05		5000		257	
	VC-14	Village Center	2.83	1	4085	0.09		5000		469	
	VC-15	Village Center	1.92	1	2771	0.06		5000		318	
	VC-17a	Village Center	0.64	1	2424	0.06		5000		278	
	VC-17b	Village Center	0.63	1	2386	0.05		5000		274	
	Subtotal					**1.49**				**7,440**	
IRRIGATION	A-1	Ag-Farm	3.39	1		3.39		1800		6102	
	A-2	Ag-Farm	5.68	1		5.68		1800		10224	
	A-3	Ag-Farm	3.77	1		3.77		1800		6786	
	A-4	Ag-Farm	8.18	1		8.18		1800		14724	
	A-5	Ag-Farm	6.25	1		6.25		1800		11250	27.27
	CP-1	Active Park (Community Park)	19.71	1		19.71		2240		44150	
	CP-1	Passive Park (Community Park)	11.51	1		11.51		2240		25782	
	MP-1	Mini Park	1.59	1		1.59		2240		3562	
	MP-5	Mini Park	0.35	1		0.35		2240		784	
	MP-31	Mini Park	1.60	1		1.60		2240		3584	
	NP-2	Neighborhood Park	3.28	1		3.28		2240		7347	
	NP-3a	Neighborhood Park	1.14	1		1.14		2240		2554	
	NP-8	Neighborhood Park	4.21	1		4.21		2240		9430	43.39
	OS	Other[7]	36.20	1		36.20		1800		65160	
	OS	Fire Mangement Zones[8]	31.10	1		31.10		1000		31100	
	Subtotal					**137.96**				**242,540**	
	TOTAL					**257.64**	**1,109**			**600,180**	

Table notes can be found on the next page.

Notes:

1 Area of zone determined from the Tentative Map/Preliminary Grading Plan prepared by Hunsaker & Associates unless otherwise noted.

2 The village centers are mixed-use parcels containing both residential and commercial spaces. In Table 3.2 of the specific plan " Site utilization Plan statistical summary", a total of 60,000 commercial square footage was assigned to all three villages (40,000 SF - Fanita Commons, 10,000 SF - Orchard Village and 10,000 SF - Vineyard Village). Within each Village there are individual Village Centers. The estimated commercial floor area within each Village Center parcel was estimated by taking the ratio of each individual Village Center parcel area to the total of all Village Center areas and multiplying by the total commercial square footage per village. By employing this method, each Village Center parcel is assigned a prorated commercial square footage that can be utilized to calculate the commercial water demand. The same applies for the commercial areas in the Agriculture zone designation, which is an additional 20,000 SF of commercial area.

3 Water use factors are based on water planning criteria in Table 4-1-2 of the WAS which specifies 5,000 gpd/acre for commercial water use (applied based on the net acreage of commercial building area), and 3,000 gpd/acre for parks and farm areas (applied based on net acreage). Since the park and farm areas are based on gross acreages, the water use factor is reduced to 1,800 gpd/gross acre for farms (based on the net irrigable farm acre being 60% of the gross) and 2,220 gpd/gross acre for parks (based on the net irrigable park acreage being 74% of the gross).

4 Water use per Dwelling Unit (DU) is a factor calculated using the population density per dwelling unit from the WAS design guidelines and the Specific Plan multiplied by 100 gpcd from the 2015 Padre Dam Facilities Master Plan.

5 VC-2 reserves a 1.5-acre fire station site per Table 3.2 in the Specific Plan.

6 Fire Station population is incorporated in the household occupancy rate per the Specific Plan.

7 Other irrigation includes roadway lanscaped medians, side slopes, and riparian habitat. Irrigation is applied at a conservative rate of 1,800 gpd/acre. Based upon a plant factor of 0.30, the calculated water use is 1,554 gpd/acre. For a plant factor of 0.40, the calculated water use is 2,072 gpd/acre. Using a ratio of 65% landscape with a 0.30 plant factor and 35% landscape with a 0.40 plant factor results in a combined irrigation rate of 1,735 gpd/acre which is less than the 1,800 gpd/acre used in this analysis.

8 The category for fire management zones (FMZ) is inclusive of water quality basins. The irrigation rate of 3,000 gpd/acre is reduced to 1,000 gpd/acre to reflect watering of these areas to approximately one third of the normal turf irrigation rate.

Table 3-4
Phase 2 – Orchard Village Water Demand Generation

Planning Area		Land Use	Area (Acres)[1]	No. Units	Total Area (SF)	Area Designated for Planning (Acres)[1,2,5]	Dwelling Units (DU)	Water Use (Gal/Acre-Day)[3]	Water Use per DU[4]	Total Water Demand (GPD)
RESIDENTIAL	M-1	MDR	6.13	102		6.13	102		310	31620
	M-2	MDR	8.91	111		8.91	111		310	34410
	M-9/R-1 MDR	MDR 35' x 85' (76 units)	5.64	76		5.64	76		310	23560
	R-2	LDR 50' x 100' (79 units)	12.32	79		12.32	79		340	26860
	R-3	LDR 60' x 100' (53 units)	10.73	53		10.73	53		340	18020
	R-5b	LDR 70' x 100' (52 units)	12.08	52		12.08	52		340	17680
	R-8	LDR 55' x 100' (83 units)	16.80	83		16.80	83		340	28220
	VC-16a	Village Center	0.72	9		0.72	9		310	2790
	VC-16b	Village Center	0.65	8		0.65	8		310	2480
	Subtotal					**73.98**	**573**			**185,640**
COMM-ERCIAL[2]	VC-16a	Village Center	0.72	1	2727	0.06		5000		310
	VC-16b	Village Center	0.65	1	2462	0.06		5000		285
	Subtotal					**0.119**				**595**
IRRIGATION	MP-2	Mini Park	1.69	1		1.69		2240		3786
	MP-3	Mini Park	0.22	1		0.22		2240		493
	MP-4	Mini Park	0.35	1		0.35		2240		784
	MP-22	Mini Park-Paseo	0.08			0.08		2240		179
	MP-23	Mini Park-Paseo	0.09			0.09		2240		202
	MP-24	Mini Park-Paseo	0.08			0.08		2240		179
	MP-25	Mini Park-Paseo	0.08			0.08		2240		179
	MP-26	Mini Park-Paseo	0.09			0.09		2240		202
	MP-27	Mini Park-Paseo	0.08			0.08		2240		179
	MP-28	Mini Park-Paseo	0.07			0.07		2240		157
	MP-29	Mini Park-Paseo	0.07			0.07		2240		157
	NP-1	Neighborhood Park	4.58	1		4.58		2240		10259
	NP-3b	Neighborhood Park	2.07	1		2.07		2240		4637
	OS	Other[5]	9.90	1		9.90		1800		17820
	OS	Fire Mangement Zones[6]	15.50	1		15.50		1000		15500
	Subtotal					**34.95**				**54,712**
	TOTAL					**109.05**	**573**			**240,947**

Notes:

1 Area of zone determined from the Tentative Map/Preliminary Grading Plan prepared by Hunsaker & Associates unless otherwise noted.

2 The village centers are mixed-use parcels containing both residential and commercial spaces. In Table 3.2 of the specific plan " Site utilization Plan statistical summary", a total of 60,000 commercial square footage was assigned to all three villages (40,000 SF - Fanita Commons, 10,000 SF - Orchard Village and 10,000 SF - Vineyard Village). Within each Village there are individual Village Centers. The estimated commercial floor area within each Village Center parcel was estimated by taking the ratio of each individual Village Center parcel area to the total of all Village Center areas and multiplying by the total commercial square footage per village. By employing this method, each Village Center parcel is assigned a prorated commercial square footage that can be utilized to calculate the commercial water demand. The same applies for the commercial areas in the Agriculture zone designation, which is an additional 20,000 SF of commercial area.

3 Water use factors are based on water planning criteria in Table 4-1-2 of the WAS which specifies 5,000 gpd/acre for commercial water use (applied based on the net acreage of commercial building area), and 3,000 gpd/acre for parks and farm areas (applied based on net acreage). Since the park and farm areas are based on gross acreages, the water use factor is reduced to 1,800 gpd/gross acre for farms (based on the net irrigable farm acre being 60% of the gross) and 2,220 gpd/gross acre for parks (based on the net irrigable park acreage

4 Water use per Dwelling Unit (DU) is a factor calculated with population per dwelling unit based on the WAS design guidelines mutiplied with 100 gpcd from the 2015 Padre Dam Facilities Master Plan.

5 Other irrigation includes roadway lanscaped medians, side slopes, and riparian habitat. Irrigation is applied at a conservative rate of 1,800 gpd/acre. Based upon a plant factor of 0.30, the calculated water use is 1,554 gpd/acre. For a plant factor of 0.40, the calculated water use is 2,072 gpd/acre. Using a ratio of 65% landscape with a 0.30 plant factor and 35% landscape with a 0.40 plant factor results in a combined irrigation rate of 1,735 gpd/acre which is less than the 1,800 gpd/acre used in this analysis.

6 The category for fire management zones (FMZ) is inclusive of water quality basins. The irrigation rate of 3,000 gpd/acre is reduced to 1,000 gpd/acre to reflect watering of these areas to approximately one third of the normal turf irrigation rate.

Table 3-5
Phase 3 – Vineyard Village Water Demand Generation

Planning Area		Land Use	Area (Acres)[1]	No. Units	Area Designated for Planning (Acres)[1,4]	Dwelling Units (DU)	Water Use (Gal/Acre-Day)[2]	Water Use per DU[3]	Total Water Demand (GPD)
RESIDENTIAL	M-8	MDR	4.86	61	4.86	61		310	18910
	R-9	LDR 55' x 100' (48 units)	9.54	48	9.54	48		340	16320
	R-10	LDR 80' x 100' (58 units)	17.72	59	17.72	59		340	20060
	R-11	LDR 55' x 100' (33 units)	6.00	33	6.00	33		340	11220
	R-12	LDR 60' x 100' (52 units)	9.97	52	9.97	52		340	17680
	R-13	LDR 70' x 100' (40 units)	12.77	43	12.77	43		340	14620
	R-14	LDR 60' x 100' (41 units)	8.66	41	8.66	41		340	13940
	R-15	LDR 60' x 100' (26 units)	6.43	26	6.43	26		340	8840
	R-16	LDR 60' x 100' (30 units)	6.40	30	6.40	30		340	10200
	R-17	LDR 80' x 100' (50 units)	15.79	52	15.79	52		340	17680
	R-18	LDR 55' x 100' (67 units)	11.99	67	11.99	67		340	22780
	Subtotal				**110.13**	**512**			**172,250**
IRRIGATION	A-6	Agriculture	1.78	1	1.78		1800		3204
	A-7	Agriculture	5.30	1	5.30		1800		9540
	A-8	Agriculture	2.00	1	2.00		1800		3600
	MP-6	Mini Park	0.17	1	0.17		2240		381
	MP-7	Mini Park	0.12	1	0.12		2240		269
	MP-8	Mini Park	0.37	1	0.37		2240		829
	MP-9	Mini Park	0.25	1	0.25		2240		560
	MP-10	Mini Park	0.22	1	0.22		2240		493
	MP-12	Mini Park	1.71	1	1.71		2240		3830
	MP-20	Mini Park	0.98	1	0.98		2240		2195
	MP-21	Mini Park	0.26	1	0.26		2240		582
	MP-30	Mini Park	1.59	1	1.59		2240		3562
	NP-7	Neighborhood Park	3.80	1	3.80		2240		8512
	OS	Other[4]	13.20	1	13.20		1800		23760
	OS	Fire Mangement Zone[5]	31.10	1	31.10		1000		31100
	Subtotal				**62.85**				**92,417**
	TOTAL				**172.98**	**512**			**264,667**

Notes:

1 Area of zone determined from the Tentative Map/Preliminary Grading Plan prepared by Hunsaker & Associates unless otherwise

2 Water use factors are based on water planning criteria in Table 4-1-2 of the WAS which specifies 5,000 gpd/acre for commercial water use (applied based on the net acreage of commercial building area), and 3,000 gpd/acre for parks and farm areas (applied based on net acreage). Since the park and farm areas are based on gross acreages, the water use factor is reduced to 1,800 gpd/gross acre for farms (based on the net irrigable farm acre being 60% of the gross) and 2,220 gpd/gross acre for parks (based on the net irrigable park

3 Water use per Dwelling Unit (DU) is a factor calculated with population per dwelling unit based on the WAS design guidelines mutiplied with 100 gpcd from the 2015 Padre Dam Facilities Master Plan.

4 Other irrigation includes roadway lanscaped medians, side slopes, and riparian habitat. Irrigation is applied at a conservative rate of 1,800 gpd/acre. Based upon a plant factor of 0.30, the calculated water use is 1,554 gpd/acre. For a plant factor of 0.40, the calculated water use is 2,072 gpd/acre. Using a ratio of 65% landscape with a 0.30 plant factor and 35% landscape with a 0.40 plant factor results in a combined irrigation rate of 1,735 gpd/acre which is less than the 1,800 gpd/acre used in this analysis.

5 The category for fire management zones (FMZ) is inclusive of water quality basins. The irrigation rate of 3,000 gpd/acre is reduced to 1,000 gpd/acre to reflect watering of these areas to approximately one third of the normal turf irrigation rate.

Table 3-6
Phase 4 – Vineyard Village Water Demand Generation

Planning Area		Land Use	Area (Acres)[1]	No. Units	Total Area (SF)	Area Designated for Planning (Acres)[1,2,5]	Dwelling Units (DU)	Water Use (Gal/Acre-Day)[3]	Water Use per DU[4]	Total Water Demand (GPD)
RESIDENTIAL	M-4	MDR	8.45	106		8.45	106		310	32860
	M-5	MDR	9.38	117		9.38	117		310	36270
	M-6	MDR	6.79	85		6.79	85		310	26350
	M-7	MDR	10.31	129		10.31	129		310	39990
	R-19	SF 70' x 100' (67 units)	16.21	67		16.21	67		340	22780
	R-20	SF 60' x 75' (28 units)	3.81	28		3.81	28		340	9520
	R-21	SF 60' x 75' (70 units)	6.81	70		6.81	70		340	23800
	R-22	SF 60' x 75' (28 units)	3.10	28		3.10	28		340	9520
	R-23	SF 50' x 75' (20 units)	2.41	20		2.41	20		340	6800
	R-24	SF 60' x 75' (57 units)	6.89	57		6.89	57		340	19380
	R-25a	SF 80' x 100' (12 units)	3.51	13		3.51	13		340	4420
	R-25b	SF 80' x 100' (15 units)	4.21	15		4.21	15		340	5100
	VC-18	Village Center	6.10	79		6.10	79		310	24490
	Subtotal					**87.98**	**814**			**261,280**
COMMERCIAL[2]	VC-18	Village Center	6.10	1	10000	0.23		5000		1148
	Subtotal					**0.23**				**1,148**
IRRIGATION	A-9	Agriculture	1.84	1		1.84		1800		3312
	MP-11	Mini Park	2.05	1		2.05		2240		4592
	MP-13	Mini Park	0.76	1		0.76		2240		1702
	MP-14	Mini Park	0.26	1		0.26		2240		582
	MP-15	Mini Park	0.08	1		0.08		2240		179
	MP-16	Mini Park	0.20	1		0.20		2240		448
	MP-17	Mini Park	0.41	1		0.41		2240		918
	MP-18	Mini Park	0.33	1		0.33		2240		739
	MP-19	Mini Park	0.18	1		0.18		2240		403
	NP-4	Neighborhood Park	2.59	1		2.59		2240		5802
	NP-5	Neighborhood Park	5.30	1		5.30		2240		11872
	NP-6	Neighborhood Park	3.40	1		3.40		2240		7616
	OS	Other[5]	6.60	1		6.60		1800		11880
	OS	Fire Mangement Zone[6]	25.90	1		25.90		1000		25900
	Subtotal					**49.90**				**75,946**
	TOTAL					**138.11**	**814**			**338,374**

Notes:

1 Area of zone determined from the Tentative Map/Preliminary Grading Plan prepared by Hunsaker & Associates unless otherwise noted.

2 The village centers are mixed-use parcels containing both residential and commercial spaces. In Table 3.2 of the specific plan " Site utilization Plan statistical summary", a total of 60,000 commercial square footage was assigned to all three villages (40,000 SF - Fanita Commons, 10,000 SF - Orchard Village and 10,000 SF - Vineyard Village). Within each Village there are individual Village Centers. The estimated commercial floor area within each Village Center parcel was estimated by taking the ratio of each individual Village Center parcel area to the total of all Village Center areas and multiplying by the total commercial square footage per village. By employing this method, each Village Center parcel is assigned a prorated commercial square footage that can be utilized to calculate the commercial water demand. The same applies for the commercial areas in the Agriculture zone designation, which is an additional 20,000 SF of commercial area.

3 Water use factors are based on water planning criteria in Table 4-1-2 of the WAS which specifies 5,000 gpd/acre for commercial water use (applied based on the net acreage of commercial building area), and 3,000 gpd/acre for parks and farm areas (applied based on net acreage). Since the park and farm areas are based on gross acreages, the water use factor is reduced to 1,800 gpd/gross acre for farms (based on the net irrigable farm acre being 60% of the gross) and 2,220 gpd/gross acre for parks (based on the net irrigable park acreage being 74% of the

4 Water use per Dwelling Unit (DU) is a factor calculated with population per dwelling unit based on the WAS design guidelines mutiplied with 100 gpcd from the 2015 Padre Dam Facilities Master Plan.

5 Other irrigation includes roadway lanscaped medians, side slopes, and riparian habitat. Irrigation is applied at a conservative rate of 1,800 gpd/acre. Based upon a plant factor of 0.30, the calculated water use is 1,554 gpd/acre. For a plant factor of 0.40, the calculated water use is 2,072 gpd/acre. Using a ratio of 65% landscape with a 0.30 plant factor and 35% landscape with a 0.40 plant factor results in a combined irrigation rate of 1,735 gpd/acre which is less than the 1,800 gpd/acre used in this analysis.

6 The category for fire management zones (FMZ) is inclusive of water quality basins. The irrigation rate of 3,000 gpd/acre is reduced to 1,000 gpd/acre to reflect watering of these areas to approximately one third of the normal turf irrigation rate.

3.6 Water Conservation

The District is committed to providing its residents and customers with safe, reliable water. As the cost of imported water continues to rise, it is imperative to implement water conservation efforts when possible. Water conservation within the State of California has become a way of life for most of its residents. DWR developed mandates for the State of California to conserve water due to the increase in drought frequency. Four methods were developed by DWR for agencies to calculate target water use in compliance with Senate Bill X7-7. The District utilizes Method 3, requiring the limited water use to not exceed 95% of the DWR's target water use. Section 5.3.1 of this Assessment provides an explanation of the four methods and Senate Bill X7-7. Because of the ongoing conservation efforts of East County customers, the District has experienced a sustained per-capita average water use reduction of approximately 25% per capita water use since 2010. This per capita water use reduction was quantified in the District's 2015 Master Plan Update (Padre Dam 2015) and has resulted in District wide reductions in water demand that are reflected in this Assessment. The District also has a Drought Response in place with the SDCWA (Padre Dam 2015 Master Plan Update). This is a system where SDCWA will assess if the County is going through 1 of 5 drought conditions that the Drought Response has defined. These conditions range from normal to drought emergency. Each drought condition has a specific supply reduction requirement that SDCWA will mandate each water supply agency will be responsible for.

The District is actively engaged in the planning and development of the proposed East County Advanced Water Purification Program (ECAWP), which would recycle East San Diego County's wastewater locally and purify the water at an Advanced Water Treatment Plant. The purified water would be transported to Lake Jennings for surface water augmentation. The ECAWP Program is a collaborative partnership between the District, Helix Water District, County of San Diego, and City of El Cajon. Upon its implementation, the ECAWP is anticipated to provide a continuous, localized, drought resilient, and sustainable source of potable water for the residents and customers of the District and reduce the District's reliance on imported water supply from the SDCWA that has also lowered water use from conservation. In December 2018, the District adopted a Mitigated Negative Declaration and a Mitigation Monitoring and Reporting Program under CEQA and approved the ECAWP Project, which includes upgrades to the existing influent pump station, expansion of the Ray Stoyer Water Recycling Facility to 18 MGD average annual capacity, construction of a Solids Handling and Energy Recovery Facility, construction of an Advanced Water Treatment Plant (AWTP) Facility (11.5 MGD average annual capacity) and construction of facilities to convey purified water from the AWTP Facility to Lake Jennings for surface water augmentation. The ECAWP project, if implemented, is expected to produce up to 11.5 MGD to Lake Jennings for surface water augmentation, created from approximately 15 MGD reclaimed water from the upgrade of the Ray Stoyer WRF by the end of 2025.

The Fanita Ranch Project is anticipated to begin construction in Summer 2021 with an anticipated build-out within ten to fifteen years of construction start. Phase 1 of the Project is anticipated at minimum to reach the construction mid-point with possible full completion within the time frame expected for the ECAWP completion, end of 2025. If ECAWP is implemented, based on this projected time frame, the Project will be able to fully utilize purified water from a fully operational ECAWP. However, this

Assessment does not rely on the implementation of ECAWP to conclude that there are sufficient supplies to meet the demand of the Project. Full build-out of the Fanita Ranch Development is expected to generate and contribute approximately 0.6 MGD of wastewater to the ECAWP as described in the Fanita Ranch Development Sewer Service Study.

The Project will implement additional energy and water conservation efforts for water use. Recycled water will not be available for irrigation use within the Project. Instead, purified water produced from the ECAWP, if implemented, will be utilized for irrigation efforts and to promote low-impact developments and best management practices as indicated in the District's Master Plan and City of Santee BMP Design Manual. If the ECAWP is not implemented, the Project's irrigation needs will be met by potable water. Furthermore, water-efficient landscaping and weather-based irrigation controllers will be utilized. Landscape palettes designed for the community follow regulations established by Chapter 17.36 "Landscape and Irrigation Regulations" of the Santee Municipal Code (SMC) and the California Model Water Efficient Landscape Ordinance (MWELO) (Specific Plan Chapter 5.5).

New developments are further dependent on the requirements set forth by the California Green Building Standards Code (CALGreen) to sustain positive environmental impacts through sustainable design and construction. Water efficiency and conservation represent one of the five divisions of building construction directed by CALGreen. The Project will promote conservation efforts by utilizing water efficient appliances, dual flush toilets, and low flow water fixtures (Specific Plan Chapter 8.4.2). The District has incorporated conservation efforts into their water generation factors.

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Section 4 - Padre Dam Municipal Water District

Rio San Diego Municipal Water District was established by voters in 1955 to import and distribute water from the Colorado River and SDCWA to local water agencies and what was then an undeveloped valley. Santee County Water District was created by the County Water District Law of the State of California Water Code in 1956. In 1969, the two agencies established an agreement to combine management and engineering functions. In 1972, the Padre Dam Water Resource Agency was created to jointly exercise common powers to finance and construct an office for use by both agencies. In 1976 after a public vote, the Padre Municipal Water District was formed to merge Santee County Water District and Rio San Diego Municipal Water District into one new entity. Additional water purveyors that have since become part of the District include the former Alpine Highlands Water District and Crest Public Utility District.

The quick expansion of the Santee community created a need for sewer disposal facilities. Ray Stoyer, the general manager for Santee County Water District in 1959, decided to develop a wastewater treatment recycling facility (WRF) to satisfy the mandated wastewater treatment requirements and reduce the demand for imported water. By 1961, seven recreational recycled water lakes, known as the Santee Lakes Recreation Preserve, were constructed and established using treated recycled water effluent from the WRF. Construction of a recycled water distribution system allowed for irrigation and commercial use. The treatment facility expanded to treat approximately 2 MGD in 1997. The WRF has attracted worldwide attention and has received awards including the California Water Environment Association (CWEA) California Plant of the Year and CWEA San Diego Plant of the Year. The WRF utilizes a Bardenpho chemical-free secondary treatment system followed by advanced tertiary treatment to provide recycled water that meets the strictest Title 22 water quality standards.

The District currently serves a population over 100,000 persons and provides approximately 24,000 combined water, sewer, and recycled water service connections. The 85-square mile service area is located within the eastern section of San Diego County and is divided into two service areas – Western Service Area and Eastern Service Area. The Western Service Area serves potable, wastewater, and recycled water to the City of Santee and parts of El Cajon and Lakeside. The unincorporated county communities of Alpine, Blossom Valley, Crest, Dehesa, Flinn Springs, and Harbison Canyon are provided potable water service in the Eastern Service Area. The District's current infrastructure includes approximately 580 miles of water, wastewater and recycled water pipe, 29 reservoirs, 16 pump stations, 4 lift stations, a 2 MGD WRF, and additional aging infrastructure. The District has plans to continue to improve its service area with on-going infrastructure improvements to provide safe quality water to its customers. In addition to providing high-quality water, the District is planning to create a reliable, sustainable, and locally controlled drinking water supply through the ECAWP Program. The ECAWP Program, if implemented, would create an environmentally sound and drought-proof resource, producing up to 30 percent of East County's drinking water supplies.

4.1 Overview of Potable System Facilities

Potable water supplied by the District is 100% imported from SDCWA. The water sources from the SDCWA include the Colorado River, Bay-Delta, seawater desalination, and some local supplies. Drinking water supplied by the District continues to meet or exceeded all public health requirements enforced by the State Water Resources Control Board Division of Drinking Water and the United States Environmental Protection Agency.

The District's water system primarily consists of water storage facilities with a combined storage capacity of approximately 107.23 MG and 389 miles of transmission and distribution water mains. Pipelines within the District's service area include a combination of asbestos cement pipe (ACP), polyvinyl chloride (PVC) and concrete cylinder pipe (CCP) with approximately 15 miles of pipeline dating back prior to 1950. Booster stations are distributed throughout the District to pump water from lower pressure zones to higher pressure zones. The use of pressure reducing stations provide the ability to transfer water from higher to lower pressure zones to serve customers located in different pressure zones. The District is currently completing the Secondary Connection Project (SCP) in the ESA comprising a new flow control facility providing a secondary supply from the SDCWA, a new above ground storage tank and new booster facility. When completed, the SCP will provide additional system reliability and operational flexibility. The District is also actively planning new water storage and conveyance system improvements which have been identified in the District's 2015 Master Plan.

The potable water infrastructure has been designed to facilitate and accommodate future water system expansion to serve projects and/or demands identified within the District's Master Plan, UWMP, and other planning documents. The Fanita Ranch Project will be serviced by the construction of new water main connections to existing transmission mains located in Fanita Parkway and Cuyamaca Street and the existing 629 Zone near Carlton Hills Reservoir. Details of the method of connection and proposed onsite water distribution system and new facilities for the Project are provided in the Fanita Ranch Water Service Study.

4.2 Overview of Recycled System Facilities

The District built the Ray Stoyer WRF to treat wastewater to a level approved for irrigation, commercial use and other non-potable purposes throughout the City of Santee and nearby communities within the County of San Diego located within the water service area and including parts of the City of El Cajon and Lakeside.

Located in the City of Santee, the WRF currently treats approximately 2 MGD of raw wastewater per day to Title 22 tertiary disinfected recycled water quality. The raw wastewater is transported from a pump station located south of Santee Lakes to the WRF located to the north of the Santee Lakes. The treated recycled water is equally distributed between the Santee Lakes and Fanita Terrace Reservoir. Recycled water stored in the 1.5 MG Fanita Terrace Reservoir is gravity fed to the recycled water distribution system. The District's recycled water distribution system consists of 26 miles of recycled water pipeline. The agency currently serves 232 existing recycled water connections, less than 1% of the total number

of service connections, and approximately 1,731 AFY of recycled water is utilized within the District's service area. The District also offers free recycled water at a temporary recycled water fill station in Santee to District customers while Level 1: Drought Watch is in effect. Local customers must fill their own recycled water container approved by the District, no larger than 300 gallons, and use this source solely for irrigation at their property. (Padre Dam UWMP 2015, Section 8).

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Section 5 - Existing and Projected Supplies

Currently, the District purchases 100% of its potable water supply from SDCWA. SDCWA represents 24 agencies of which the District is a part. The SDCWA produces potable water from the Carlsbad Desalination Plant, produces recycled water, produces a small amount of groundwater, obtains transfers of conserved agricultural water from Imperial Irrigation District (IID), and also purchases water from Metropolitan that is sourced from the California State Water Project and the Colorado River. Metropolitan provides water deliveries to 26 public agencies. Metropolitan and SDCWA also have an exchange and transfer agreement where SDCWA provides part of the supply to Metropolitan. The District's 2015 UWMP, SDCWA's 2015 UWMP, and Metropolitan's 2015 UWMP are used to support this Assessment. These documents are located at the following websites with their respective contacts available below:

Padre Dam Municipal Water District

http://www.padredam.org/DocumentCenter/View/2320

Allen Carlisle. General Manager, (619) 448-3111

San Diego County Water Authority

https://www.sdcwa.org/sites/default/files/UWMP2015.pdf

Bob Yamada. Water Resources Director, (858) 522-6740

Metropolitan Water District of Southern California

http://www.mwdh2o.com/PDF_About_Your_Water/2015_UWMP.pdf

Metropolitan Staff, (213) 217-6000

The SDCWA and Metropolitan are actively pursuing programs and projects to diversify their water supply resources. This information, along with a description of local surface and local recycled water supplies available to the District, is discussed below.

5.1 Metropolitan Water District of Southern California

Metropolitan was formed in 1928 to develop, store, and distribute supplemental water in Southern California for domestic and municipal purposes. Metropolitan is a wholesale supplier of water to its member public agencies. It obtains supplies from local sources including the Colorado River, via the Colorado River Aqueduct (CRA), which it owns and operates, and the Sacramento-San Joaquin Delta, via the State Water Project (SWP). The Metropolitan 2015 UWMP discusses the availability of these existing supplies and additional supplies necessary to meet future demands. Metropolitan's 2015 UWMP explains:

> "Metropolitan has supply capabilities that would be sufficient to meet expected demands from 2020 through 2040 under single dry year and multiple dry year hydrologic conditions, as well as average year hydrologic conditions" (ES-5 of Metropolitan 2015 UWMP.)

Tables 2-4, 2-5 and 2-6 from the Metropolitan 2015 UWMP describe Metropolitan's Single Dry-Year, Multiple Dry-Year, and Average Year supply capability and projected demands. Metropolitan is expected to have a surplus of water with the minimum amount of surplus being 145,000 AFY during the Multiple Dry Year scenario.

The Integrated Water Resources Plan (IRP) 2015 Update, developed by Metropolitan, incorporates a balanced approach to stabilize traditional imported water supplies while continuing to evolve local supplies to assure 100% reliability for full-service demands at the retail level. The IRP establishes regional targets for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking and water transfers. The 2015 update to the IRP observes long-term planning for additional future resources, such as storm water capture and seawater desalination, to minimize water shortages and restrictions.

The IRP incorporates three elements to achieve a balance in resource planning:

1. Planning for the future comes with uncertainty as unforeseeable challenges and risks may occur. Metropolitan considers positive and negative situations to analyze in what way supplies can affect future circumstances. The IRP development process provided Metropolitan an opportunity to observe potential challenges and risks identifying nearly 200,000 acre-feet of additional water conservation and supplies.

2. Water agencies develop plans to analyze and prepare for future water supply. Future Supply Actions are necessary actions to prepare for water supply conditions that differ from the original plan, such as water-saving technologies, land acquisition and new supply alternatives. This action will allow agencies to consider innovative water alternatives for an unforeseeable future.

3. Adaptive water management is an approach for water purveyors to better prepare for the agency's future. Although strategies are established in the present, adaptive management is a quick and cost-effective method for unanticipated events. A history of drought-related supply shortages provoked Metropolitan to seek alternative supplies despite the long-term water strategy established within Southern California.

Using this balanced approach will help ensure that the Southern California region, including San Diego County, will have adequate supplies to meet future demands while adapting to evolving conditions.

The resource targets for Metropolitan's UWMP include the 2015 IRP Update and planned supply and demand projections developed in collaboration with member agencies. Metropolitan's UWMP contains a water supply reliability assessment that includes a detailed evaluation of the supplies necessary to meet demands over a 25-year period in average, single-dry year, and multiple-dry year periods. As part

of this process, Metropolitan also uses regional growth forecasts from the Southern California Association of Governments (SCAG) and San Diego Association of Governments (SANDAG) to calculate regional water demands for the SDCWA's service area.

Metropolitan is prioritizing in the development of water supply reliability, taking into consideration the current supplies available from the SWP and actions taken to ensure a reliable water supply. The 2015 IRP provides an informative discussion regarding reliable water supply to the year 2040 and is available in the weblink provided below:

http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf

5.1.1 Impacts of Global Climate Change on Metropolitan's Water Supply

The effects of climate change drastically alter the overall planning required for the conservation and distribution of Metropolitan's water supply. Accounting for the effects of climate change is a challenging task because the events that can occur are unpredictable. However, previous hydraulic studies produced by Metropolitan have provided a strong basis for the prediction of future events. According to Metropolitan's UWMP, the predicted impacts of global climate change that could affect Metropolitan's water supply include, but are not limited to:

(1) reduction in the average annual snowpack;

(2) changes in the timing, intensity, and location of weather events;

(3) rising sea levels;

(4) decrease in local sources such as groundwater;

(5) increase in urban and agricultural water demand;

(6) degrading water source;

(7) declines in ecosystem viability; and

(8) changes to pumping and power operations.

To prevent further greenhouse gases, Metropolitan has implemented steps to reduce the carbon footprint of its facilities, including the addition of Hydroelectric power plants that create energy from the water flowing through pipelines, and implementation of Solar Power technologies to their facilities. Metropolitan not only audits their own energy usage, but also voluntarily reports its Greenhouse Gas Emissions (GHG) to California's Climate Registry.

Metropolitan has taken steps to offset the effects of climate change on water supply. To reduce the water impacts due to climate change, Metropolitan has developed and implemented drought response action items. According to "Current Conditions" section of the Metropolitan 2015 UWMP, Metropolitan's drought response actions include:

- Increase water conservation
- Provide incentives for onsite recycled water hook ups
- Augment water supplies with water transfers and exchange
- Improve storage programs
- Upgrade its distribution system to enhance CRA water delivery
- Implement the Water Supply Allocation Plan to distribute the limited imported supplies and preserve storage reserves.

The conservation method allows for a reduction in energy that normally would have been used by exporting water instead of storing it. With the use of gravitational distribution for recycled water, less electricity is required to generate energy needed to distribute pressurized water. Efforts to implement water conservation include recycling and reusing sea water and wastewater as a reliable source of potable water. Applying such measures reduces the amount of water imported from the SWP and the Colorado River.

5.1.2 Delta Constraints

A number of distinct species of fish, including the Delta Smelt, that either reside in or migrate through the Bay-Delta are listed as either endangered or threatened under the Federal Endangered Species Act. These listed species, as well as their designated critical habitat, receive protections under the endangered species protection laws, as well as under other environmental statutes and regulations.

Beginning in 2006, Governor Arnold Schwarzenegger established the Delta Vision and Delta Vision "Blue Ribbon" Task Force to identify strategies and actions to manage and achieve a sustainable ecosystem for the Sacramento-San Joaquin Delta. The Delta Vision Task Force released a strategic plan in 2008 to protect environmental resources and provide a reliable water supply. Coordination, communication and action between the Delta Vision Task Force and state agencies are essential to the success of improving the Delta.

As described in greater detail below, the federal wildlife agencies (the United States Fish and Wildlife Service [FWS] and the National Marine Fisheries Services [NMFS]) have each issued biological opinions and "reasonable and prudent alternatives" which have the effect of placing operational constraints on the SWP and the Central Valley Project (CVP) to protect these listed fish and their habitats, and limit the timing and diversion of water supplies from the Delta. In addition, the California Department of Fish and Wildlife has issued permits under the California Endangered Species Act imposing similar constraints on SWP and CVP operations.

On December 15, 2008, FWS issued a biological opinion to the Bureau of Reclamation and the California Department of Water Resources, as the respective operators of the CVP and SWP, to reduce the impacts

of water project operations on delta smelt and other species within the jurisdiction of FWD. NMFS also issued a biological opinion on June 4, 2009 related to the long-term operations of the CVP and SWP on salmonid (salmon and steelhead) migrating through the Delta that are under the jurisdiction of NMFS. In order to minimize "taking" listed species and avoid adverse impact to the species' critical habitat, the biological opinions each require the water projects to operate under a "reasonable and prudent alternative." Ultimately, the federal Ninth Circuit Court of Appeals upheld both biological opinions as valid.

As compared with historical volumes of diversions of Delta water by the SWP, DWR's implementation of the requirements of the two biological opinions negatively impacted SWP deliveries post 2008 to all of DWR's contractors, including those made to Metropolitan. Between 2008 and 2014, Metropolitan determined implementation of the biological opinions resulted in a combined loss of 3.0 million acre-feet (MAF) to its water supplies, as compared with historical delivery amounts. In turn, the volume of water delivered by Metropolitan to its member agencies, including the SDCWA, was also concomitantly reduced.

On October 21, 2019, the U.S. Fish and Wildlife Service and National Marine Fisheries Service issued new biological opinions for continued coordinated SWP and Central Valley Project operations, which provide greater flexibility to manage the projects based on real-time conditions and real-time monitoring of fish species. DWR is currently seeking a permit from the California Department of Fish and Wildlife to operate the SWP in a way that protects species protected under the the California Endangered Species Act. DWR issued a Draft Environmental Impact Report for Long-Term Operation of the California SWP on November 21, 2019. Similar to the federal biological opinions, the proposed project allows for greater flexibility in managing the SWP based on real-time management. The State of California has announced an intent to sue the federal government over the 2019 biological opinions but has not specified the nature of that suit or when it may file it. While these developments create some uncertainty regarding future supplies, that uncertainty is currently speculative and has yet to impose any actual operational constraints on the SWP that would affect Metropolitan's supplies. Further, both the State and federal permits and proposed action incorporate new science and seek greater flexibility for SWP operations than provided under the 2008 and 2009 biological opinions.

State and federal resource agencies and various environmental and water user entities are currently engaged in developing a plan to modernize Delta conveyance (formerly known as California WaterFix, EcoRestore, the Bay Delta Conservation Plan), aimed at addressing Delta ecosystem restoration, water supply conveyance, and flood control protection and storage development. As directed by Governor Newsom in 2019 and building on work already conducted, DWR rescinded the twin tunnel WaterFix program and is pursuing a new environmental review and planning process for a single tunnel solution to modernize Delta conveyance. This approach is consistent with the Governor's April 2019 Executive Order N-10-19 directing state agencies to develop a portfolio of statewide water actions and investments. Modernizing Delta conveyance paired with complementary projects that improve water recycling, recharge depleted groundwater reserves, strengthen existing levee protections and improve Delta water quality will help ensure a resilient water supply for Metropolitan, SDCWA, and the District.

5.1.3 Lake Mead Agreements

In May 2006, Metropolitan and the USBR made an agreement to utilize Lake Mead as water storage for conservation efforts in the event of a drought. A two-year demonstration program was conducted which created 44.8 thousand acre-feet (TAF) of Intentionally Created Surplus (ICS) water, water stored through extraordinary conservation measures. In December 2007, Metropolitan developed standards under which ICS water is developed, stored, and delivered from Lake Mead. This conservation method established additional water to be imported when required by Metropolitan, specifically during dry years. Five percent of stored water is withheld annually to provide conservation efforts for the subsequent year. An additional three percent is reserved to account for potential lake evaporation. By January 1, 2015, Metropolitan had collected a total of 61.8 TAF of ICS water in Lake Mead.

Federal guidelines were established in December 2007 to allow other agencies to create "System Efficiency ICS", which would require the systems to develop and fund methods to conserve water during operations. As a result, the Central Arizona Water Conservation District (CAWCD), Southern Nevada Water Authority (SNWA), and Metropolitan donated funds to construct the Drop 2 (Brock) Reservoir by the USBR. The Drop 2 (Brock) Reservoir increased water capacity stored in the reservoir to better regulate the water supplies of the Colorado River water at Imperial Dam. The Drop 2 (Brock) Reservoir will annually reduce the excess flow from the dam by 70 TAF. Metropolitan received 100 TAF of System Efficiency ICS water for their financial contributions to the Drop 2 (Brock). Metropolitan also contributed to a one-year pilot operation of the Yuma Desalting Plant to provide data for long-term water supply impacts through the plant development. In return, Metropolitan received 24.4 TAF of System Efficiency ICS stored in Lake Mead.

5.1.4 Quagga Mussel Control Program

Quagga Mussels are located in the lower Colorado River from Lake Mead through Lake Havasu. Quagga Mussels are known to compromise water quality by broadcasting mussel larvae in water conveyance systems. In 2007, the Metropolitan developed the Quagga Mussel Control Program (QMCP) to observe and mitigate mussel larvae. The QMCP conducts control measures and annual surveillance activities in addition to two to three week-long shutdowns of the CRA for maintenance and repairs. Quagga Mussel control also includes water chlorination at the Copper Basin Reservoir outlet, quarterly mobile chlorination at outlet towers and mussel removal from the trash racks at the Lake Havasu pumping plant. The implementation of the QMCP proved to be effective in reducing the number and size of the mussels as noticed by recent inspection shutdowns.

5.1.5 Capital Investments

Metropolitan's annual budget approval process includes the preparation and development of a Capital Investment Plan (CIP). The CIP is structured into three levels consisting of Programs at the highest level, then Appropriations, and finally Projects. Under each CIP Program, there are one or more Appropriations, with each Appropriation containing multiple Projects. The structure of the CIP allows for efficient documentation of the cost, status, and progress of each of Metropolitan's approved infrastructure projects to deliver present and future water supplies. Project financing is approved

through the annual budget approval process. The CIP is formulated to ensure that the projects reflect Metropolitan's goals of providing a sustainable supply of high-quality water for the lowest cost. The projects are also analyzed to "prioritize projects that directly support reliability, quality and safety for inclusion in Metropolitan's proposed CIP." (CIP – Project Evaluation). The CIP appendix document is available at the link below. The CIP Appendix tracks the progress made of all of the planned projects in the Metropolitan area and defines what was started and completed during the fiscal years of 2018/19 and 2019/20.

http://www.mwdh2o.com/PDF_About_Your_Water/CIP_Appendix.pdf

5.2 San Diego County Water Authority

The SDCWA was formed in 1943 to provide a supplemental supply of water to the San Diego region due to the increase of military personnel and civilians caused by the war. The SDCWA, one of 26 Metropolitan member agencies, is the largest Metropolitan member agency in terms of deliveries, purchasing approximately 22% of the Metropolitan water delivered in fiscal year 2015/2016. The 24-member agencies, comprising the SDCWA, purchase water from the SDCWA for retail distribution within their service areas. The SDCWA purchases water from Metropolitan and obtains transfers of conserved agricultural water from IID. Furthermore, the SDCWA began operation of the Carlsbad Desalination Plant in late 2015 with an original capacity to deliver nearly 50 MGD (56,000 AFY) of potable water to the region. These supplies are delivered to its member agencies through two aqueducts containing five large-diameter pipelines. As of May 2019, the Carlsbad Desalination Plant was authorized by the San Diego Regional Water Quality Control Board to increase the production of potable water from desalination from 50 MGD to 60 MGD (67,000 AFY). This source was not accounted for in SDCWA's 2015 UWMP, which projected supply from the Carlsbad Desalination Plant at 50,000 AFY through 2040. Instead, this potential increased capacity could be placed into service prior to 2025. (SDCWA UWMP, 4.5.) SDCWA's 30-year 2012 Water Purchase Agreement provides that SDCWA will purchase the entire output from the Carlsbad Desalination Plant. (SDCWA 2015 UWMP, 4.5.2; Appendix E.) SDCWA's Board of Directors adopted guiding principles to make water from the Carlsbad Desalination Plant available to its member agencies, including the District.

The SDCWA developed its 2015 UWMP (2015 Plan) in accordance with state law. Section 9 of the 2015 Plan contains a water supply reliability assessment that identifies a diverse mix of imported and local supplies necessary to meet demands over the next 25 years in average, single-dry year, and multiple-dry year periods. As stated in Section 9, *"With a very conservative assumption regarding limited Metropolitan supplies during a single dry water year, and assuming the Water Authority and member agency supplies are maintained and developed as planned, along with achievement of the additional conservation target, no shortages are anticipated within the Water Authority's service area in a single dry-year until 2035"* (SDCWA 2015 UWMP Section 9.) More significant shortages are anticipated during multiple dry water year events beginning in 2028 (SDCWA 2015 UWMP Section 9.) The SDCWA maintains that these shortages can be mitigated through extraordinary water conservation actions and

dry-year transfers, which SDCWA successfully acquired and used during the 2007-2011 shortage period. (SDCWA 2015 UWMP Section 9.3.)

Section 4 and Appendix E of the 2015 Plan contains information for the existing and planned water supplies developed by the SDCWA, including continued transfer of conserved water from the IID, All American Canal and Coachella Canal lining projects, Carlsbad Desalination Plant, and additional seawater desalination projects. This documentation was prepared for use by the SDCWA's member agencies to facilitate preparation of the water supply assessments and written verifications required under state law.

SDCWA has been authorized to increase capacity at the Carlsbad Desalination Plant, which it projects could be placed into service prior to 2025 and which it provides to its member agencies such as the District. Additionally, according to SDCWA's 2018 Annual Report, SDCWA has lowered its long-term regional water-use projections due to sustained water-use efficiency throughout the region, resulting in an interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon in comparison with its 2015 UWMP. Furthermore, SDCWA has available portions of the reserved Accelerated Forecasted Growth component of its planned water supply, which is incorporated into SDCWA's demand forecast at a regional level and thus available to all member agencies, to meet additional demand increments not previously identified. The demand associated with the Accelerated Forecasted Growth component is included in SDCWA's regional total demand forecast and is intended to account for a portion of SANDAG's estimated residential land use development that is currently projected to occur beyond the SDCWA's 2040 planning horizon, but that has the potential to move forward on an accelerated schedule. This Accelerated Forecasted Growth demand was incorporated by SDCWA at a regional level for planning purposes and is not portioned out by member agencies. This allows for an additional 4,807 AFY beginning in 2025, a portion of which has been allocated to the District for the Project. Specifically, SDCWA has allocated 778 AFY of its Accelerated Growth Forecast to meet the demands associated with the Project. (See Appendix A, confirmation from SDCWA.)

Table 5-1 Total Regional Baseline Demand Forecast (Excludes Future Conservation) (AF)[1]

	2020	2025	2030	2035	2040
Baseline M&I Demand	602,100	673,886	715,690	744,370	781,433
Baseline Agricultural Demand	52,961	51,379	49,897	48,460	47,214
Near-Term Annexations	4,029	7,162	7,162	7,162	7,162
Accelerated Forecasted Growth	2,632	4,807	6,806	9,038	11,186
Total Baseline Demand Forecast	**661,722**	**737,234**	**779,555**	**809,030**	**846,995**

1. This table is taken out of the SDCWA UWMP 2015 Table 2-2 under the same title.

5.3 Padre Dam Municipal Water District

The District currently purchases 100% of its potable water from the SDCWA, which supplies the water through several treatment plants and conveys treated water through SDCWA's aqueduct system. The District manages and produces its own recycled water and a small amount of groundwater. No

groundwater will be used to serve the Project. The District pumped 34 AFY in 2015 from the Alluvial Basin, which supports the District's recycled water system. Further discussion of the District's water system can be found in Section 4 of this Assessment.

5.3.1 Demonstrating the Availability of Sufficient Supplies

Imported Supplies

Section 5, Subdivision 11 of the SDCWA Act states that the SDCWA "…as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." The SDCWA is collaborating with its 24-member agencies to increase the amount of local water supply in the region. This will reduce the dependence on the Metropolitan's water supply. The development of the SDCWA was a critical component in the ability to provide its members, including the District, with a steady imported water supply.

Conservation

Governor Jerry Brown signed Senate Bill X7-7 into law, which states that all water suppliers in the state of California must increase water use efficiency. This bill includes reducing water use by 20 percent per capita by the end of the year 2020. The water suppliers can pick one of the four different methods that were predetermined by the DWR, which are as following:

- Method 1: Reduce per capita water use by 20 percent by 2020.
- Method 2: Reduce commercial water use by 10 percent. Measure customer irrigation water usage and application of irrigation water budgets. Determine water use target based on 55 gpcd.
- Method 3: Set target water use at 95% of DWR's target water use for the South Coast hydrologic region.
- Method 4: Determine per capita water use from water loss, unaccounted-for water, and residential indoor; commercial, industrial, and institutional (CII); and landscape.

On top of the mandated water conservation, the District offers different conservation programs for its water customers. These include:

- Free residential landscape survey
- Voucher and incentive programs for water savings
- Free low-flow showerhead kits
- Turf removal and turf replacement program

The District selected Method 3 for its water use targets, which is the same method noted in the prior 2010 UWMP. DWR's water use target for the South Coast hydrologic region is currently set at 149 gpcd. Based upon the Method 3 target of 95% of the DWR target, the District's water use is capped at 142 gpcd.

Recycled Water Supplies

The District supplies approximately 2 MGD of recycled water from the Ray Stoyer WRF. Approximately 1.0 MGD is distributed to the Santee Lakes and another 1.0 MGD is distributed for irrigation and commercial applications. The Fanita Ranch Project is not expected to use recycled water for onsite irrigation. Instead the project may utilize purified water from the District's proposed ECAWP Project, which was approved in December 2018. The ECAWP Project is currently in the preliminary engineering, and regulatory permitting phase. The ECAWP's estimated date of completion is the end of 2025. If the ECAWP is not implemented, the Project will use potable water to supply irrigation or any other recycled water needs.

Padre Dam Municipal Water District's Capital Improvement Program

The Capital Improvement Program (CIP) is a five-year budget and business plan developed by the District to assess, maintain and improve pipelines, reservoirs, pump stations and other related facilities. The CIP is the District's plan to economically develop new and improve existing facilities while supplying quality water, maintaining facilities, and managing the water and sanitary systems. District staff and Board of Directors review and analyze financial requirements for each project, prioritize investments, and determine rates that generate appropriate revenue for implementation of the CIP as well as maintenance, operation and management of the facilities. The Board of Directors, comprising of five members, each representing a geographic area within the service area, adopt a CIP budget, establish the scope, and manage costs for the numerous projects planned to meet the District's long-term needs. The Board of Directors also select, review and approve various aspects of a project.

The main objectives of a CIP are to evaluate and replace sewer and water infrastructure, conform to new mandates, and provide safe and dependable water and sewer facilities. After the Cedar fire of 2003, extra precautions have been taken to ensure the water supply will not become deficient in case of emergency. Prevention measures include the construction of additional pipelines, pump stations and reservoirs. Pump stations are sized to provide needed fire flow and equipped with backup generators to create redundant water supply for every pressure zone.

The District's CIP projects are funded by the Capital Replacement Fund (CRF) and the Capital Expansion Fund (CEF). Per the District's website, the CRF receives funding from rates paid by current water customers and developer capacity fees. The CEF is funded by the remaining portion of developer-paid capacity fees and can only be used to fund projects required by growth. Certain District projects are reimbursed by the CRF and CEF. All park projects are paid separately through the park funds. The CIP

budget is updated annually to ensure the CIP is up to date with the projects in progress. Before a project can move forward, the project's budget must be approved by the Board. This allows the Board to review the projects with more insight on management of District finances.

Summary of Supplies

Historic imported water demand, imported water supply, and local recycled water demands are shown in Table 5-2 for the period 2001 through 2012.

Table 5-2
Historical Annual Imported Water and Local Recycled Water Supply and Demand

Year	Imported Water Demand (AFY)	Imported Water Supply (AFY)	Local Recycled Water Demand (AFY)[2]
2001	14,342	15,279	1,862
2002	15,301	16,717	1,602
2003	14,904	15,794	2,128
2004	15,389	16,381	1,994
2005	14,509	15,834	1,829
2006	15,475	16,277	1,938
2007	16,044	16,546	1,958
2008	14,589	15,406	1,596
2009	12,921	13,553	1,618
2010	11,140	11,560	1,770
2011	11,123	11,337	1,893
2012	11,419	11,725	1,934
Average	13,930	14,697	1,844

Notes:
1. This table displays information from Table 3.4, Table 3.19, and Table 3.20 from the Master Plan.
2. Demand shows summation of customer demand and Santee Lakes recycled water demand (Master Plan, Table 3.19 and Table 3.20).

5.3.2 Plans for Acquiring Additional Supplies

Future Supplies

The District and other agencies will develop future local supply sources to reduce reliance on the SDCWA. The District is planning to implement the ECAWP to create its own reliable local source of water. The purpose of the ECAWP Program, if implemented, is to generate enough purified water to minimize the District's reliance on imported water supplies by up to 30%.

The District, Helix Water District, County of San Diego, and City of El Cajon worked together to prepare a feasibility planning study evaluating whether approximately 15 MGD of wastewater generated in East

County could be reused as drinking water. The District constructed a demonstration scale pilot plant with full advanced treatment technologies to produce purified water that complies with the State Water Board Division of Drinking Water regulations. The results of the pilot plant have determined which treatment processes could be implemented for the proposed full-scale ECAWP as part of the ongoing project planning and preliminary design.

From a regional perspective, wastewater generated within the District and surrounding areas is currently transferred to the Point Loma Wastewater Treatment Plant and discharged to the Pacific Ocean. However, with the advancement of modern treatment technologies that provide advanced treatment of wastewater derived sources, the feasibility planning study determined that East County can reduce its reliance on imported water, eliminate wastewater discharge into the Pacific Ocean, and create a new, local, sustainable, and drought-resistant drinking water supply. The ECAWP is planned to be implemented in one phase. The project, if implemented, would increase the capacity of the existing Ray Stoyer WRF from 2.0 MGD to 15 MGD and construct the new 11.5 MGD AWP facility. Once complete, the program would use four advanced water purification steps to produce water that is near-distilled in quality. After treatment, the purified water would be blended with water in Lake Jennings and treated again at the R.M. Levy Water Treatment Plant before being distributed as drinking water. The purified water produced from the new facility would reduce reliance on imported water purchases through the SDCWA by replacing with up to 30% of purified water via surface water augmentation in Lake Jennings. The EPA has selected the ECAWP to apply for $342 million in funding from the Water Infrastructure Finance and Innovation Act loans, and a joint powers authority has been formed to serve as the governing body for the project. If the project is approved for construction, the currently estimated date of construction completion is the end of 2025.

Water Transfers

The District relies on the SDCWA to acquire water transfer agreements, as needed, for water supply reliability. Water transfer can offer flexibility and help ensure that the state's water resources are effectively used. While a myriad of rules surrounds transfers in California, water transfers are not currently considered a supply resource to meet projected demands associated with the Project. Water transfer between the District and Lakeside Water District was implemented in case of an emergency. In 2015, the District transferred 9 AF to Lakeside.

By 2025, the local Native American Viejas and Ewiiaapaayp tribes may connect to the District's water distribution system. The expected demand for both tribes would be approximately 2,307 AFY. This extra demand would be transferred from SDCWA using the District's existing infrastructure. If agreements are secured between the tribes and the water suppliers, other parcel owners located between the Viejas boundary and District boundary may seek to connect to the District water distribution system.

Section 6 - Projected Demands

Approximately every five years, the District calculates projected water demands within its service area for planning purposes as part of the UWMP. The District's billing data is used to determine water use by major water sectors: commercial, industrial, residential, and public uses for the current planning year. By implementing water data supplied by the District and demographic data provided by SANDAG, the District can correlate the data with a model to determine sector water demands and project water demands into the future. The model also accounts for system water losses, water savings from conservation efforts, low income household water use, and climate change impacts on water use.

The projected water demands from the District's 2015 UWMP are utilized in the preparation of Table 6-1 through Table 6-6 of this Assessment. In addition to the District, the SDCWA and Metropolitan use regional growth forecasts to calculate projected water demands within their respective service areas. Collaboration provides for consistency between the local and regional water demands that are projected by the retail and wholesale agencies, thereby ensuring adequate supplies are planned for the District's existing and future water users, including agricultural and manufacturing uses.

The past (2015 actual) and projected (2020 through 2040) District potable and raw water demands are summarized in Table 6-1 by various demand types. The additional Fanita Ranch water demand of 778 AFY (refer to Section 2), not previously accounted for in the District's 2015 UMWP, is included in the demand projections beginning in 2025 which is the expected completion date of Phase 1 of the Project.

Table 6-1
District's Past (Actual) and Projected Potable Water Demands

Sector	Additional Description (as needed)	2015 (Actual) (ac-ft)	Projected (ac-ft)				
			2020	2025	2030	2035	2040
Single Family	Municipal and Industrial	6,201	9,746	10,900	11,131	11,404	11,742
Multi Family	Municipal and Industrial	1,886					
Commercial	Municipal and Industrial	970					
Institutional/ Gov't	Municipal and Industrial	226					
Landscape	Municipal and Industrial	626					
Agricultural Irrigation		284	458	396	340	291	298
Sales/Transfers to other agencies	Emergency connection to LWD	9	--	2,388	2,388	2,388	2,388
Other	Portable supplement to recycled water system	14	--	--	--	--	--
Other	Construction	68	--	--	--	--	--
Losses		176	315	349	355	362	372
FR Add'l Demand	Potable Supplement to FR	--	--	778	778	778	778
TOTAL		**10,460**	**10,519**	**14,811**	**14,992**	**15,223**	**15,578**

Notes:
1. Information taken from Table 4-1 and Table 4-2 of the District's 2015 UWMP.
2. Table data modified to include additional demand of 778 AFY for Fanita Ranch starting in Year 2025.

Table 6-2 summarizes the projected total District water demands for each five-year interval for the planning period 2020 through 2040 inclusive of the potable demands from Table 6-1 and including non-potable demands served by recycled water. As noted in Section 3, the District is planning and developing the ECAWP. As a result, the existing recycled water supply is projected to be capped at 2,016 AFY for the planning period 2020 through 2040. Recycled water will not be available to the Project for irrigation use. Potable water from the SDCWA or from the ECAWP, if implemented, will be provided to meet the Project's irrigation demands as discussed in Section 5.

Table 6-2
District's Projected Total Water Demands (AFY)

Water Demand by Type	2020	2025	2030	2035	2040
Potable Water from Table 6-1	10,519	14,811	14,992	15,223	15,578
Local Recycled Water[1]	2,016	2,016	2,016	2,016	2,016
Total Water Demand	**12,535**	**16,827**	**17,008**	**17,239**	**17,594**

Notes:
1. Local Recycled Water information taken from Table 6-4 of the District's 2015 UWMP and does not include ECAWP.

Table 6-3 provides a summary of projected normal year water demands including additional Fanita Ranch demands in comparison to normal year supply for the five-year intervals for the planning period from 2020 through 2040. The additional Fanita Ranch demand of 778 AFY will be supplied by SDCWA as described in Section 5 of this report, through the use of Accelerated Forecasted Growth demand that has been allocated for this Project by SDCWA and/or will be supplied by the District from potable supplies made available due to the development of the ECAWP, if implemented. The District's assessment of its ability to supply water to the Project is not dependent on the completion of the ECAWP.

Table 6-3
District's Projected Normal Year Supply and Demand Comparison (AFY)

Water-Use	2020	2025	2030	2035	2040
Potable Water Demand	10,519	14,033	14,214	14,445	14,800
Recycled Water Demand	2,016	2,016	2,016	2,016	2,016
Fanita Ranch Additional Water[1]	--	778	778	778	778
Total Demand	12,535	16,827	17,008	17,239	17,594
Projected Imported Water (SDCWA)[2]	10,519	14,033	14,214	14,445	14,800
Recycled Water (District)	2,016	2,016	2,016	2,016	2,016
Projected Additional Supply (SDCWA)[3]	--	778	778	778	778
Total Supply	12,535	16,827	17,008	17,239	17,594

Notes:
1. The 2015 UWMPs for the District and SDCWA included 840 AFY of projected demand for Fanita Ranch in accordance with the 2007 Boyle Study. The total projected water demand for Fanita Ranch is 1,618 AFY. Therefore, an additional 778 AFY of demand for Fanita Ranch is projected beginning in 2025.
2. Projected Imported Water extracted from Table 6-9 of the District's 2015 UWMP.
3. The Accelerated Forecasted Growth component of SDCWA's 2015 UWMP can provide additional supply capacity to the District. SDCWA has confirmed the availability of 778 AFY to serve the Fanita Ranch demand. See Appendix A for confirmation from SDCWA. ECAWP is not included in the additional supply projections.

6.1 Projected Single and Multiple Dry Year Supply and Demand 2020

SB 610 requires that demand and required supply projections include the impact of single and multiple dry year scenarios. To be conservative, the demands are projected to remain the same as in normal years. However, the regional and local agencies determine the impacts to water supplies during single and multiple dry year conditions based on the specific characteristics of their respective water supply systems which may include raw water sources, treatment, storage, energy use and power availability, and other relevant aspects of water distribution systems. Table 6-4 shows the projected supply and demand totals for the single-dry year and multiple dry year assessment for year 2020. The District's imported water supplies are actually projected to have excess water available during the single and multiple dry years with the available supply in year three being equal to the demand required beginning in assessment year 2020. Multiple-dry year scenarios represent hot, dry weather periods that may cause available local surface water supply reductions. However, the SDWCA has implemented desalination and increased regional storage to handle multiple dry year conditions (SDCWA UWMP Section 4.5,4.6; Section 9.3; Section 11). Furthermore, recycled water supplies will remain constant during dry periods due to operational constraints, i.e., the District produces significantly more wastewater than it treats for reuse and will not be affected by reductions due to conservation. The table does not include demand for Fanita Ranch nor potential supply from the ECAWP, if implemented, as these projects will not be available until after 2020.

Table 6-4
District's Projected Single and Multiple Dry Years (2020, AFY)

	Average/ Normal Year	Single Dry Year[1]	Multiple Dry Years[2]		
			Year 1	Year 2	Year 3
Imported Water	10,519	11,241	11,960	11,163	10,519
Recycled Water	2,016	2,016	2,016	2,016	2,016
Supply Totals	12,535	13,257	13,976	13,179	12,535
Demand Totals	12,535	12,535	12,535	12,535	12,535

Notes:
1. Single Dry Year data for 2020 extracted from Table 7-3 of the District's 2015 UWMP.
2. Multiple Dry Years data for 2020 extracted from Table 7-4 of the District's 2015 UWMP.

6.2 Projected Single Dry Year (2020 – 2040)

Table 6-5 shows supply and demand totals for the single-dry year assessment in five-year increments for the twenty-year period from 2020 through 2040. Local recycled water supply during each single dry year matches previous values shown in Table 6-3 for each normal year. The additional Fanita Ranch demand of 778 AFY is included beginning with year 2025. This Assessment includes the available SDCWA imported supply at the single dry year amounts previously projected in the District 2015 UWMP and the additional supply of 778 AFY allocated to the Project from the Accelerated Forecasted Growth that has been confirmed available by SDCWA as described in Section 5 of this Assessment. Demand during single dry water years is expected to equal normal year demand.

As shown in Table 6-5, a supply shortfall of 784 AFY is projected for 2040. This shortfall amount was projected in the District's 2015 UWMP, Table 7-3. The District can address the shortfalls identified in its 2015 UWMP through the implementation of measures identified in section 8 of its 2015 UWMP: Water Shortage Contingency Planning. (District's 2015 UWMP, section 7.3.) Further, the shortfalls identified in the SDCWA 2015 UWMP and the District's 2015 UWMP will be mitigated by the interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon identified in the 2018 SDCWA Annual Report in comparison with the SDCWA 2015 UWMP as well as the potential increase of output at the Carlsbad Desalination Project, which could be placed into service prior to 2025.

Alternatively, potable supplies made available due to the development of the ECAWP, if implemented, can serve the Project. Although not analyzed as part of this Assessment, Phase 1 of the ECAWP will have the ability to provide up to 12,880 AFY to the region, a portion of which would augment the District's supply for Fanita Ranch and other District demands, beginning in 2025.

Table 6-5
District's Projected Single Dry Year Supply and Demand Comparison (2020-2040, AFY)

	Supply and Demand Comparison - Single-Dry Year Events				
	2020	**2025**	**2030**	**2035**	**2040**
Normal Year Supply	*12,535*	*16,827*	*17,008*	*17,239*	*17,594*
District RW Supply	2,016	2,016	2,016	2,016	2,016
Single Dry Year Supply Available from SDCWA[2]	11,241	14,148	14,214	14,445	14,016
Additional Single Dry Year Supply from SDCWA[3]	0	778	778	778	778
Total Single Dry Year Supply	13,257	16,827	17,008	17,239	16,810
Single Dry Year Demands	12,535	16,827	17,008	17,239	17,594
Difference	722	0	0	0	(784)

1. Single Dry Year Demand Totals include the additional 778 AFY water demand needed to fulfill the project's needs starting in 2025.
2. From Table 7-3 (Row G) of the District's 2015 UWMP.
3. The Accelerated Forecasted Growth component of the SDCWA's 2015 UWMP is projected to provide additional supply capacity to the District to meet the additional 778 AFY required by the Project. See Appendix A, for confirmation from SDCWA. ECAWP is not included in the additional supply projections.

6.3 Projected Multiple Dry Year Supply and Demand

Table 6-6 shows projected supply and demand totals for the multiple dry year assessment in five-year increments for the period 2020 through 2040. Imported and recycled water supplies match those previously provided in the District's 2015 UWMP. The Accelerated Forecasted Growth component of the SDCWA's 2015 UWMP is projected to provide additional supply capacity to the District. A portion of this excess amount is available to supply the additional 778 AFY Fanita Ranch demand, as confirmed by SDCWA. (See Appendix A for confirmation for SDCWA.) Alternatively, if implemented, the proposed ECAWP provides the additional water necessary to balance the total supply to the total demand throughout the planning period or reduce required supplies from SDCWA. Demands during the multiple dry year analysis are projected to remain the same as in normal years and do not account for potential demand mitigation that can be implemented by the District to reduce demands in drought conditions. Therefore, the demand projections in Table 6-6 are conservative.

As shown in Table 6-6, supply shortfalls begin to occur during the third dry year of 2025, the second dry year of 2035, and the first dry year of 2040. The District can address the shortfalls identified in its 2015 UWMP through the implementation of measures identified in section 8 of its 2015 UWMP: Water Shortage Contingency Planning. (District's 2015 UWMP, section 7.3.) Further, the shortfalls identified in

the SDCWA 2015 UWMP and the District's 2015 UWMP will be mitigated by the interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon identified in the 2018 SDCWA Annual Report in comparison with the SDCWA 2015 UWMP as well as the potential increase of output at the Carlsbad Desalination Project, which SDCWA projects may be available by 2025. Alternatively, potable supplies made available due to the development of the ECAWP, if implemented, can serve the Project and mitigate supply shortfalls to the region. Although not analyzed as part of this Assessment, Phase 1 of the ECAWP would have the ability to provide up to 12,880 AFY to the region, a portion of which would augment the District's supply for Fanita Ranch and other District demands, beginning in 2025.

Table 6-6
District's Projected Multiple-Dry Year Supply and Demand Comparison (2020-2040, AFY)

		Supply and Demand Comparison – Multiple Dry Year Events				
		2020	**2025**	**2030**	**2035**	**2040[3]**
Normal Year Supply		*12,535*	*16,827*	*17,008*	*17,239*	*17,594*
1st Year	**Supply (District RW)**	2,016	2,016	2,016	2,016	2,016
	Supply (SDCWA)	11,960	14,931	14,635	14,445	14,016
	Supply (Add'l SDCWA[1])	--	778	778	778	778
	Supply Totals	13,976	17,725	17,432	17,239	16,810
	Demand Totals[2]	12,535	16,827	17,008	17,239	17,594
	Difference	1,441	898	424	0	(784)
2nd Year	**Supply (District RW)**	2,016	2,016	2,016	2,016	2,016
	Supply (SDCWA)	11,163	14,033	14,214	14,125	13,766
	Supply (Add'l SDCWA[1])	--	778	778	778	778
	Supply Totals	13,179	16,827	17,008	16,919	16,560
	Demand Totals[2]	12,535	16,827	17,008	17,239	17,594
	Difference	644	0	0	(320)	(1,034)
3rd Year	**Supply (District RW)**	2,016	2,016	2,016	2,016	2,016
	Supply (SDCWA)	10,519	13,868	13,573	13,282	12,995
	Supply (Add'l SDCWA[1])	--	778	778	778	778
	Supply Totals	12,535	16,662	17,008	16,076	17,594
	Demand Totals[2]	12,535	16,827	17,008	17,239	17,594
	Difference	0	(165)	(641)	(1,163)	(1,805)

1. The Accelerated Forecasted Growth component of the SDCWA's 2015 UWMP is projected to provide additional supply capacity to the District to meet the additional 778 AFY required by the Project. See Appendix A, for confirmation from SDCWA. ECAWP is not included in the additional supply projections.
2. Demand Total includes the additional 778 AFY water demand needed to fulfill the project's needs starting in 2025.
3. The Multiple Dry Years Supply and Demand Comparison from the District's 2015 UWMP Table 7-8 did not determine values for 2040; these values were estimated by Michael Baker International based on the trends of the years 2025-2035.

Section 7 - Conclusion - Availability of Sufficient Supplies

The purpose of this Assessment is to analyze whether the total projected water supplies available from Metropolitan, SDCWA, and the District's own sources during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the Fanita Ranch Project, in addition to the District's existing and planned future uses, including agricultural and manufacturing uses.

The Assessment concludes that the District's total projected water supplies are sufficient to serve the District's customers, including the increased demand from the Fanita Ranch Project from 2020 to 2040 in normal, single-, and multiple- dry year scenarios as described in Section 6. SDCWA has confirmed that it has allocated Accelerated Forecasted Growth supplies for the additional demand associated with the Project. While the SDCWA 2015 UWMP does project supply shortfalls in certain single-dry and multiple-dry years, SDCWA maintains that such shortfalls can be mitigated through the use of its carryover storage capacity, which totals 170,000 AF, and if necessary, through extraordinary water conservation actions and dry-year transfers, which SDCWA successfully acquired and used during the 2007-2011 shortage period. Further, the shortfalls identified in the SDCWA 2015 UWMP will be mitigated by the interim demand forecast reduction of approximately 60,000 acre-feet for the entire 2020 to 2040 planning horizon identified in the 2018 SDCWA Annual Report and with the potential increased output at the Carlsbad Desalination Plant, which could be available prior to 2025, in comparison with the supply projections contained in the SDCWA 2015 UWMP. Similarly, the District can address shortfalls identified in its 2015 UWMP through the implementation of conservation measures identified in its Water Shortage Contingency Plan.

Projecting future supplies and demands involves uncertainties. As to supplies, Metropolitan and SDCWA have developed water supply and management plans to improve long-term reliability and reduce dependence upon existing imported supplies. The 2015 UWMP and IRP by Metropolitan and the 2015 UWMP by SDCWA include projects that meet long-term supply needs with water security provided by the local water supply development, recycled water, and increased conservation efforts. SDCWA is reducing its reliance on Metropolitan deliveries through its development of local supplies, such as the Carlsbad Desalination Project. The District plans to reduce its dependence on imported supplies from SDCWA by continuing with permanent water conservation efforts and its own development of local supplies. Furthermore, if development of the ECAWP proceeds, the District can utilize this new local source to offset the amount of imported potable water. The District will continue to make efforts to analyze, prepare, manage, and implement plans to provide a secure and reliable long-term water supply for the future. As to demands, this Assessment relies upon historical information and standard forecasting methods. Conservation measures are reflected in the demand projections during multiple-dry years based on the balanced approach to water supply and demand management successfully implemented by Metropolitan, SDCWA, and the District based on their coordinated UWMPs and related IRWM Plans.

This Assessment does not create a right or any entitlement to water service. It is not a commitment to serve the Project but is a review of the District's total projected water supplies and an analysis of the District's ability to serve the Project based on presently available information. This Assessment and its analyses and conclusions are conditioned in part on the ability of Metropolitan and SDCWA to continue to supply imported water to meet the District's needs. Water service is contingent upon prompt payment of all charges, rates, and fees as adopted by the District from time to time.

The development of new communities, such as Fanita Ranch, provides opportunity to promote and implement additional conservation measurements to address the future water supply shortages. Water efficient irrigation, landscaping, appliances and fixtures are ways to implement conservation for the new community and the District. All landscape plans are required to ensure compliance with applicable requirements, and the applicant/developer will be required to plan and install water efficient devices and landscaping in accordance with applicable District development Guidelines and Standards, ordinances, and requirements.

Section 8 - Source Documents

California Department of Water Resources (DWR), Progress on Incorporating Climate Change into Management of California's Water Resources, July 2006 Report

http://baydeltaoffice.water.ca.gov/climatechange/DWRClimateChangeJuly06.pdf

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Section 9 - Appendix

A. Padre Dam's Request to Use AFG and County Water Authority's Response

APPENDIX A – PADRE DAM'S REQUEST TO USE AFG AND COUNTY WATER AUTHORITY'S RESPONSE

An Everyday Essential

PADRE DAM

January 15, 2020

San Diego County Water Authority
Attn: Elizabeth Lovsted
4677 Overland Ave.
San Diego, CA 92123

SUBJECT: Fanita Ranch Subdivision – Water Supply Assessment

Padre Dam Municipal Water District (Padre Dam) is preparing a Water Supply Assessment for the Fanita Ranch Subdivision Project (Project) in accordance with the requirements of an SB 610 assessment.

The Project site is located east of the Marine Corps Air Station Miramar and Padre Dam facilities including Santee Lakes Recreation Preserve, south of open space and recreational areas including Goodan Ranch/Sycamore Canyon County Preserve, west of State Route 67 and the unincorporated residential community of Eucalyptus Hills, and north of State Route 52 and existing residential neighborhoods within the City of Santee.

The Project is estimated to begin construction in 2021 and full buildout is expected by 2035. The Project includes various land uses consisting of 240.8 acres of low density residential, 67.0 acres of medium density residential, 31.0 acres of active adult, and 36.5 acres of village center/ higher density residential. Commercial uses are located within the village center land use. The Project also sets aside 1,984.4 acres of open space made up of 1,650.4 acres of natural open space, 78.0 acres of irrigated parks and trails, and 256.0 acres of irrigated open space which are mostly slopes.

The anticipated water demand of the Project is 1,618 Acre Feet per Year (AFY) starting in 2021. In Padre Dam's Comprehensive Facilities Master Plan and 2015 Urban Water Management Plan (UWMP), the "planned" water demand of this project site is 840 AFY starting in 2020. As such, the remaining unaccounted projected water demand is estimated to be 778 AFY as summarized in the table below:

	Water Demands (Acre-Feet per Year)		
Project Name	Initial Planned	Revised Projection	Unaccounted
Fanita Ranch	840	1618	778

Padre Dam is requesting the use of the Accelerated Forecasted Growth (AFG) component of the San Diego County Water Authority's 2015 Urban Water Management Plan to meet the 778 AFY of unaccounted demand associated with this project. Your consideration for this request is much appreciated.

Please contact me at (619) 258-4640, if you have any questions.

PADRE DAM MUNICIPAL WATER DISTRICT

Courtney Mael, PE
Engineering Manager
Development and Construction

CM:cc

Courtney Mael

From: Courtney Mael
Sent: Tuesday, January 28, 2020 2:46 PM
To: Courtney Mael
Subject: Padre Dam AFG Request for Fanita Ranch Project

From: Crutchfield, Jeremy
Sent: Tuesday, January 21, 2020 5:16 PM
To: cmael@padre.org
Cc: Bombardier, Tim <tbombardier@sdcwa.org>; Stephenson, Jeff <JStephenson@sdcwa.org>; Lovsted, Elizabeth <ELovsted@sdcwa.org>
Subject: Padre Dam AFG Request for Fanita Ranch Project

Courtney,
Thank you for your letter regarding the water use figures for Padre Dam MWD's Fanita Ranch Subdivision Project. The following is the Water Authority's response to your request to use the Accelerated Forecasted Growth (AFG) component of the Water Authority's 2015 Urban Water Management Plan to meet the unanticipated water demands associated with the Fanita Ranch Subdivision Project. The purpose of the AFG component of the demand forecast is to estimate, on a regional basis, additional demand associated with proposed projects not yet included in local jurisdictions' general plans and to plan for sufficient regional supplies to reliably meet the water demand of those projects. The Fanita Ranch Subdivision Project identified in your January 15, 2020 letter meets the criteria for the AFG component of the Water Authority's 2015 UWMP, and we are planning to have water supplies to reliably meet the updated demand associated with the project.

Our accounting of the remaining AFG component will be adjusted to reflect the additional revised demand associated with the proposed Fanita Ranch Subdivision Project. In order to accurately account for utilization of the AFG, we request that Padre Dam MWD send the Water Authority notification of when this project, or any other project that utilized the AFG demand component, is approved and included in Padre Dam MWD's land-use plans provided to the San Diego Association of Governments for their long-term growth forecasting.

Please let me know if you have any questions or wish to discuss this matter further.

Best Regards,
Jeremy

Jeremy Crutchfield, P.E.
Manager, Water Resources Department
Office: 858-522-6834
Cell: 858-344-3878

Our Region's Trusted Water Leader
San Diego County Water Authority