

# Appendix L1

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## Overview of Water Service



# DEXTER WILSON ENGINEERING, INC.

WATER • WASTEWATER • RECYCLED WATER  
CONSULTING ENGINEERS

## OVERVIEW OF WATER SERVICE FOR SUNBOW II, PHASE 3

September 2020

**OVERVIEW OF WATER SERVICE  
FOR  
SUNBOW II, PHASE 3**

September 2020



**Prepared by:  
Dexter Wilson Engineering, Inc.  
2234 Faraday Avenue  
Carlsbad, CA 92008**

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## ABBREVIATIONS

ac -	acre
AF -	acre-foot
AMSL -	above mean sea level
cfcd -	community facilities district
cfs -	cubic feet per second
CRA -	Colorado River Aqueduct
GDP/SRP -	General Development Plan/Subregional Plan
gpd -	gallons per day
gpf -	gallons per flush
gpm -	gallons per minute
HOA -	homeowners association
IID -	Imperial Irrigation District
LAFCO -	Local Agency Formation Commission
mgd -	million gallons per day
MAF -	million acre-feet
MF -	multi-family land use designation
MWD -	Metropolitan Water District of Southern California
psi -	pounds per square inch
SAMP -	subarea master plan
SF -	single family land use designation
SDCWA -	San Diego County Water Authority
SWP -	State Water Project
UWMP -	Urban Water Management Plan

## USEFUL CONVERSIONS

1 acre-foot	=	325,829 gallons
1 mgd	=	1,000,000 gallons/day
1 cfs	=	448.8 gpm
1 cubic foot	=	7.48 gallons
1 mgd	=	694.4 gpm

## **CHAPTER 1**

### **INTRODUCTION**

With the exception of Planning Area 23, the Sunbow project has been fully developed. This report provides an overview of water service for the Sunbow II, Phase 3 (formerly Planning Area 23) project. This report will estimate water demands, outline regional water facilities to be constructed, and recommend onsite facilities to accommodate project demands. The report includes an overview of water supplies in the region and recommends water facilities specific to the needs of the Sunbow II, Phase 3 project.

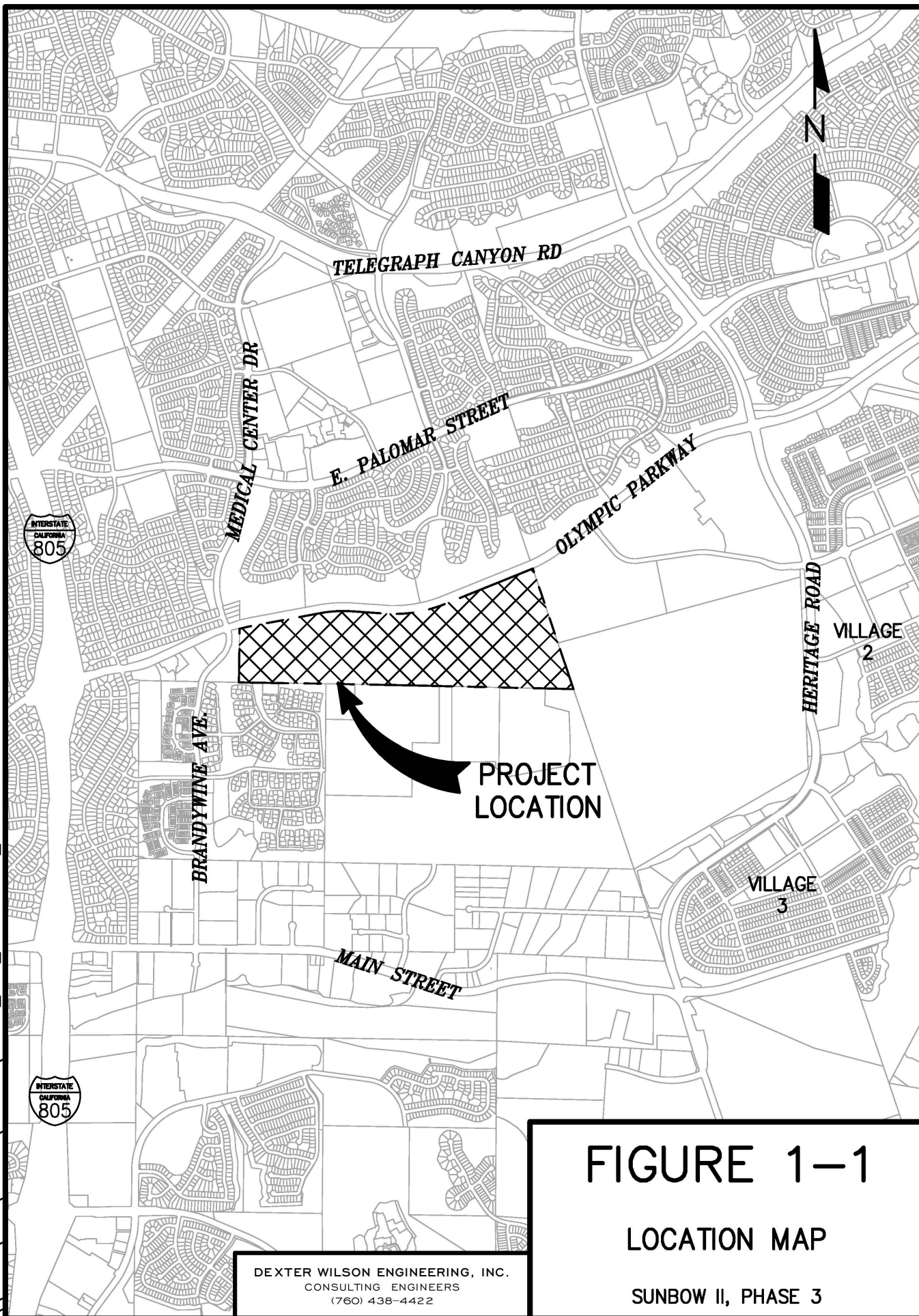
### **PHYSICAL SETTING**

The Sunbow II, Phase 3 project site is located in the City of Chula Vista, along the south side of Olympic Parkway. There are two proposed points of access to the project off Olympic Parkway that have not changed from the 1998 Sunbow Specific Planning Area (SPA) plan. Topography on the property ranges in elevation from about 250 feet to 470 feet. Developed pads on the property will range in elevation from approximately 370 feet to 420 feet. Figure 1-1 presents a location map for the project.

### **PROPOSED LAND USE PLAN**

The II, Phase 3 site has historically been planned as an approximately 64 acre industrial park. The proposed Sunbow II, Phase 3 Amendment includes a Chula Vista General Plan Amendment, a Sunbow General Development Plan Amendment, a Sunbow Sectional Planning Area Amendment, Rezone and tentative map necessary to implement the proposed project. A more detailed land use description is provided in Appendix A.

\\ARTIC\DWG\509116\REPORT\SPA23\_WTR\FIGURE-1-1\_VM.DWG 06-17-20 14:33:25 LAYOUT: LAYOUT



The Proposed Project includes 718 multi-family units on approximately 44 acres within the 135.7 acre area designated Sunbow II, Phase 3 in the 1998 Sunbow SPA Site Utilization Plan. The Proposed Project includes four unique residential product types in two- and three-story units. Open space requirements are satisfied in a variety of forms, including private read yards, porches, decks and patios as well as common useable open space comprised of common courtyards, landscaped areas and the 0.9 acre community purpose facility. The Proposed Project also includes approximately 5.9 acres for backbone streets and 63.6 acres designated MSCP Preserve open space.

## **WATER SERVICE**

The Sunbow II, Phase 3 project site is within the boundaries of the Otay Water District (OWD) for water service. For its potable water, the OWD relies solely on the San Diego County Water Authority (SDCWA), a member of the Metropolitan Water District (MWD). A large portion of the water used in the SDCWA area is imported from MWD, which transports its water supply through the State Water Project (SWP) and the Colorado River Aqueduct (CRA). The SDCWA transports filtered water to near the Lower Otay Reservoir, just south of the property.

The OWD has existing and planned facilities in the vicinity of the project and water service can be provided by expanding the existing system. In particular, water service will be provided by the 624 Pressure Zone (624 Zone) within the Central Area System of the OWD. The 624 Zone is fed from SDCWA aqueduct connections that supply 624 Zone Reservoirs. This report will provide recommendations for expanding the 624 Zone as needed to provide water service to the Sunbow II, Phase 3 project.

## **PURPOSE OF STUDY**

This report provides an overview of water service for the proposed Sunbow II, Phase 3 project. This document is prepared as a supporting document for the project's Specific Plan and EIR. The developers of the project will be required to prepare a private water system analysis concurrent with final engineering plans to establish domestic water service and water sizes and to size the private fire supply system to meet fire flow requirements.

## CHAPTER 2

### PLANNING CRITERIA AND PROJECTED WATER DEMANDS

This chapter presents the planning criteria used to evaluate the water system for the Sunbow II, Phase 3 project. The criteria are utilized for analysis of the existing water system as well as for sizing of proposed improvements and expansions to the existing system to accommodate demands in the study area. Unless otherwise noted, this criteria is taken from the OWD 2015 Water Facilities Master Plan Update.

#### Duty Factors and Peaking Factors

Table 2-1 presents the duty factors used in projecting the total average demand for the Sunbow II, Phase 3 project. The required fire flows and durations are also listed. Actual fire flow requirements will be determined as site specific details such as building footprints and construction materials become available. The fire flow requirements listed in Table 2-1 are used by the OWD in master planning their overall water system.

TABLE 2-1 WATER DUTY FACTORS			
Land Use Designation	Unit Domestic Demand	Required Fire Flow (gpm)	Required Fire Flow Duration (hours)
Multi-Family (>10 DU/AC)	170 gpd/unit	2,500	2
Park/CPF	1,900 gpd/ac	-----	-----

To convert average day potable water demands to maximum day demands, Figure 4-1-2 (Curve 2) from the Water Agency Standards was utilized. To convert average day potable water demands to peak hour demands, Figure 4-1-1 (Curve 2) from the Water Agency Standards was used.



### **System Pressures**

Generally, the potable water distribution system is designed to maintain static pressures between 65 psi and 200 psi. This criteria is used to initially divide a project between water service zones. The potable water distribution system has been designed to yield a minimum of 40 psi residual pressure at any location under peak hour demand flows, and a minimum residual pressure of 20 psi during maximum day demand plus fire flow conditions. Potable water mains are sized to maintain a maximum velocity of 10 feet per second under a maximum day plus fire flow scenario and a maximum velocity of 6 feet per second under peak hour flow conditions.

### **Pump Station**

Pump stations are sized for a firm capacity equivalent to the maximum day demand of the zone being served and all higher zones supplied by the pump station. Firm capacity is defined as the pumping capacity of the station when one pumping unit is out of service. To allow OWD flexibility to avoid pumping during peak electricity times, the pumps will be sized to allow pumping to occur over a 16 hour period.

### **Reservoirs**

Reservoir storage consists of operational storage, emergency storage, and fire flow storage. Operational storage is to be equivalent to 30 percent of the maximum daily demand for the area being served. Emergency storage is to be equivalent to 100 percent of the maximum daily demand for the area be served. Fire flow storage is to be based on the highest fire flow and duration required within the service area. Where multiple reservoirs are provided within a pressure zone, the fire flow storage requirement applies to the whole zone and not to each individual reservoir.

## Projected Water Demands

Table 2-2 provides the projected potable water demand for the Sunbow II, Phase 3 project. The total estimated average potable water use is 0.12 mgd. This demand will be supplied from OWD's 624 Zone as discussed in Chapter 4. Recycled water will be used for irrigation of manufactured slopes and common areas. Table 2-3 provides the projected recycled water demands for the project.

TABLE 2-2 SUNBOW II, PHASE 3 PROJECTED POTABLE WATER DEMANDS					
Neighborhood	Land Use Designation	Gross Acres	Quantity, Units	Water Duty Factor	Total Average Water Demand, GPD
R-1	MF Residential	8.5	131	170 gpd/unit	22,270
R-2	MF Residential	4.6	73	170 gpd/unit	12,410
R-3	MF Residential	8.1	108	170 gpd/unit	18,360
R-4	MF Residential	8.2	118	170 gpd/unit	20,060
R-5	MF Residential	7.1	104	170 gpd/unit	17,680
R-6	MF Residential	7.6	184	170 gpd/unit	31,280
<b>TOTAL</b>			<b>718</b>		<b>122,060</b>

TABLE 2-3 SUNBOW II, PHASE 3 PROJECTED RECYCLED WATER DEMANDS			
Land Use Designation	Quantity	Irrigation Factor	Total Average Demand, GPD
Irrigated Slopes	12 ac	1,900 gpd/ac	22,800
Private Open Space/CPF	0.9 ac	1,900 gpd/ac	1,710
<b>TOTAL</b>			<b>24,510</b>

## **CHAPTER 3**

### **WATER SUPPLY**

#### **Urban Water Management Planning Act**

In 1983, the Legislature enacted the Urban Water Management Planning Act (California Water Code sections 10610 through 10656), which requires every urban water supplier that provides water to 3,000 or more customers, or over 3,000 acre feet (af) of water annually, to make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its customers during normal, dry, and multiple-dry years. The UWMP is required in order for a water supplier to be eligible for the Department of Water Resources (DWR) administered state grants, loans, and drought assistance. The UWMP provides information on water use, water resources, recycled water, water quality, reliability planning, demand management measures, best management practices, and water shortage contingency planning for a specified service area or territory.

#### **Senate Bills 610 and 221**

California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 are referred to as Senate Bill (SB) 610 and Government Code Sections 65867.5, 66455.3, and 66473.7 are referred to as SB 221. SB 610 and SB 221 amended state law, effective January 1, 2002, intending to improve the link between the information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the California Environmental Quality Act (CEQA) environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are to be available for certain residential subdivision of property. SB 610 requires a city or county to evaluate whether water supplies will be sufficient to meet the projected water demand for certain "projects" that are otherwise subject to the requirement of CEQA. SB 610 provides its own definition of "project" in Water Code Section 10912.

## **Urban Water Management Plans**

The California Urban Water Management Planning Act requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers, or more than 3,000 acre-feet of water annually, must prepare, adopt, and update a UWMP at least once every five years on or before December 31, in years ending in five and zero. This applies to MWD, SDCWA, and its member agencies, including OWD, that serve unincorporated San Diego County. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. An UWMP also serves as a valuable resource for planners and policy makers over a 25 year time frame.

The UWMP process ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term. Water agencies and districts update their demand and supply estimates based on the most recent San Diego Association of Governments (SANDAG) forecast approximately every five years to coincide with preparation of their UWMPs. The most current supply and demand projections are contained in the 2015 UWMPs of MWD, SDCWA, and OWD. SDCWA member districts rely on the UWMPs and Integrated Resources Plans (IRPs) of MWD and the Regional Water Facilities Master Plan of SDCWA for documentation of supplies available to meet projected demands.

Normal year, single-dry year, and multiple-dry year 2015 UWMP supply and demand assessments for MWD, SDCWA, and OWD are intended to describe the water supply reliability and vulnerability to seasonal or climatic conditions, to the extent practical. Normal water years are considered to be years that experience average rainfall for the respective district. Single-dry water years are considered one year drought events. Multiple-dry water years refer to a series of below average rainfall for particular areas (i.e., multiple drought year conditions). Projections for multiple-dry years are made in five year increments. In the 2015 UWMPs, MWD, SDCWA and all SDCWA member agencies, including OWD, that serve unincorporated San Diego County determined that adequate water supplies would be available to serve existing service areas under normal year, single-dry year, and multiple-dry year conditions through the year 2040.

## REGIONAL AND LOCAL WATER SUPPLY

### Metropolitan Water District

MWD supplies water to approximately 18.7 million people in a 5,200-square mile service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. SDCWA is one of MWD's 26 member agencies. Supply and demand projection information for MWD is included in its 2015 Regional UWMP, adopted in May 2016. MWD's long-term strategy for a sustainable water supply is outlined in its Integrated Resources Plan (IRP), updated approximately every five years, and last updated in October 2015. MWD's IRP identifies a mix of resources (imported and local) that will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking, and water transfers through the year 2040. SDCWA is the largest MWD agency in terms of delivery, purchasing approximately 25 percent of MWD's water. MWD gets its water from two sources. The first source is the Colorado River, which is connected to MWD's six-county service area through a 242-mile aqueduct. The aqueduct system is known as the Central Valley Project (CVP). The CVP is operated by the U.S. Bureau of Reclamation. The second source is water from northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the State Water Project (SWP). The SWP is operated by the California Department of Water Resources (DWR). From the Colorado River Agreement (CRA), MWD is apportioned 550,000 acre-feet of water per year (AFY) from the Colorado River. Despite this low apportionment, MWD was able to transport up to 1.2 million acre-feet (MAF) through the CRA in past years by relying on unused apportionments from Arizona, Nevada, and California agricultural agencies. However, because MWD's firm water supply from the CRA is only 550,000 AF that is the number planning agencies must rely on for development. To supplement this supply, MWD also has several existing programs and programs being developed in cooperation with other agencies.

From the SWP, MWD is contractually entitled to receive 1,911,000 AF of water; however, the level of SWP supply development, state and federal environmental regulations, and other factors have restricted and, in some cases, reduced actual amount of available SWP water. As a result of these and other limitations, MWD estimates that actual SWP supplies will be 701,000 AF in a dry year and 566,000 AF during multiple dry years, with Delta improvements.

In May 2016, the MWD adopted its 2015 Regional UWMP, which is an update to its prior 2010 Regional UWMP. In its 2015 UWMP, MWD evaluated water supply reliability, over a 20-year period, for average, single-dry, and multiple-dry years. To complete its most recent water supply reliability assessment, MWD developed estimates of total retail demands for the region, factoring in the impacts of conservation. After estimating demands, the water reliability analysis identified current supplies and supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands through the year 2040. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs. Appendix A-3 to the MWD 2015 Regional UWMP contains detailed justifications for the sources of supply projected to meet water demands in the region, including Colorado River Aqueduct deliveries (Colorado River supplies) and California Aqueduct deliveries (SWP supplies).

#### **San Diego County Water Authority (SDCWA)**

The SDCWA service area covers approximately 951,000 acres and encompasses the western third of San Diego County. SDCWA has 24 member agencies, 15 of which provide water to unincorporated areas of San Diego County. The SDCWA is responsible for ensuring a safe and reliable water supply to support the region's economy and the quality of life for three million residents. Because of the County's semi-arid climate and limited local water supplies, SDCWA has historically imported between 70 and 95 percent of the water used in the San Diego region from MWD. In 2008, MWD provided 71 percent of the San Diego region's water supply. Most of this water is obtained from the Colorado River and the SWP through a system of pipes, aqueducts, and associated facilities. Through development of new local water supply sources such as the Carlsbad Desalination Plant, SDCWA has become increasingly less reliant on MWD water supplies in recent years.

Both MWD and SDCWA provide water supplies to their member agencies in order to meet projected water demand based upon regional population forecasts. The San Diego Association of Governments (SANDAG) is responsible for providing and updating land use planning and demographic forecasts for San Diego County. MWD and SDCWA update their water demand and supply estimates based on the most recent SANDAG forecasts approximately every five years to coincide with preparation of their respective UWMPs.

In June 2016, the SDCWA adopted its 2015 UWMP, updating the previously adopted 2010 UWMP. Sections 4, 5, and 6 of SDCWA's 2015 UWMP contain documentation of SDCWA's existing and planned water supplies, including MWD supplies (imported Colorado River water and SWP water), SDCWA supplies, and local member agency supplies (surface water reservoirs, water recycling, groundwater, and groundwater recovery). SDCWA supplies include (1) IID water transfer supplies, (2) Supplies from conservation projects to line the All-American Canal and the Coachella Canal, located in Imperial and Coachella Valleys, and (3) development of a seawater desalination facility at the Encina Power Plant in Carlsbad, which is anticipated to produce 56,000 AFY of additional water supplies. (See Table 3-1 below.)

Additionally, since 1980, approximately 5 percent to 30 percent of the member agencies water has come from local sources, primarily from surface water reservoirs as indicated in Table 3-1. Recycled water and groundwater recovery projects are growing in importance in the region, and water conservation efforts have also made SDCWA member agencies less dependent on imported water.

<b>TABLE 3-1</b> <b>PROJECTED NORMAL YEAR WATER SUPPLIES (AFY)</b>					
<b>WATER SOURCE</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
<b>Water Authority Supplies</b>					
IID Water Transfer	190,000	200,000	200,000	200,000	200,000
Supply from MWD	136,002	181,840	207,413	224,863	248,565
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Regional Seawater Desalination	50,000	50,000	50,000	50,000	50,000
<b>Member Agency Supplies</b>					
Surface Water	51,580	51,480	51,380	51,280	51,180
Water Recycling	40,459	43,674	45,758	46,118	46,858
Groundwater	17,940	19,130	20,170	20,170	20,170
Seawater Desalination	6,000	6,000	6,000	6,000	6,000
Brackish Groundwater Recovery	12,100	12,500	12,500	12,500	12,500
<b>TOTAL PROJECTED SUPPLIES</b>	<b>587,581</b>	<b>648,124</b>	<b>676,721</b>	<b>694,431</b>	<b>718,773</b>

Source: San Diego County Water Authority 2015 Urban Water Management Plan.



Section 9 of SDCWA's 2015 UWMP evaluates water supply reliability in average, single-dry, and multiple-dry years. Based on SDCWA's water supply reliability assessment, SDCWA concluded that water supplies would be sufficient through 2040. (See section below regarding Summary of Water Supplies and Demand, and Tables 3-2 through 3-4.)

Based on the imported and member agency local water sources discussed above, SDCWA estimates that it, along with member agency local sources will be able to supply 587,581 AF of water in 2020, as demonstrated in Table 3-1 above. Therefore, according to the MWD and SDCWA 2015 UWMPs, there is available water to meet all of the region's anticipated demand, including development of the Sunbow II, Phase 3 project, in average/normal and dry water years, as demonstrated in Table 3-2, Table 3-3 and Table 3-4, below. A Water Supply Assessment and Verification Report will need to be prepared for the Sunbow II, Phase 3 project by OWD to further detail the water supply assumptions and findings of OWD, SDCWA, and MWD. The reason that supplies exactly meet demands in Table 3-2 is that SDCWA only imports the amount of water necessary to meet demand. In Tables 3-3 and 3-4, years that show a deficit would require the use of water storage offsets and management actions to balance demand and supplies. These tables simply indicate that SDCWA has adequate supply to meet projected demands

<b>TABLE 3-2 AVERAGE/NORMAL WATER YEAR SUPPLY AND DEMAND ASSESSMENT (AFY)</b>					
<b>MEMBER AGENCY SUPPLIES</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
Surface Water	51,580	51,480	51,380	51,280	51,180
Water Recycling	40,459	43,674	45,758	46,188	46,858
Groundwater	17,940	19,130	20,170	20,170	20,170
Brackish Groundwater Recovery	12,100	12,500	12,500	12,500	12,500
Seawater Desalination	6,000	6,000	6,000	6,000	6,000
Potable Reuse	3,300	3,300	3,300	3,300	3,300
<b>WATER AUTHORITY SUPPLIES</b>					
IID Water Transfer	190,000	200,000	200,000	200,000	200,000
Supply from MWD	136,002	181,840	207,413	224,863	248,565
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Carlsbad Desalination Plant	50,000	50,000	50,000	50,000	50,000
<b>TOTAL PROJECTED SUPPLIES</b>	<b>587,581</b>	<b>648,124</b>	<b>676,721</b>	<b>694,431</b>	<b>718,773</b>
<b>TOTAL ESTIMATED DEMANDS<sup>1</sup></b>	<b>587,581</b>	<b>648,124</b>	<b>676,721</b>	<b>694,431</b>	<b>718,773</b>
<b>DIFFERENCE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>1</sup> With Conservation.

Source: San Diego County Water Authority 2015 Urban Water Management Plan.



**TABLE 3-3  
SINGLE DRY WATER YEAR SUPPLY AND DEMAND  
ASSESSMENT (AFY)**

<b>MEMBER AGENCY SUPPLIES</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
Surface Water	6,004	6,004	6,004	6,004	6,004
Water Recycling	40,459	43,674	45,758	46,188	46,858
Groundwater	15,281	15,281	15,281	15,281	15,281
Brackish Groundwater Recovery	12,100	12,500	12,500	12,500	12,500
Seawater Desalination	6,000	6,000	6,000	6,000	6,000
Potable Reuse	3,300	3,300	3,300	3,300	3,300
<b>WATER AUTHORITY SUPPLIES</b>					
IID Water Transfer	190,000	200,000	200,000	200,000	200,000
Supply from MWD	263,340	264,740	263,340	260,680	258,720
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Carlsbad Desalination Plant	50,000	50,000	50,000	50,000	50,000
<b>TOTAL PROJECTED SUPPLIES</b>	<b>666,684</b>	<b>681,699</b>	<b>682,383</b>	<b>680,083</b>	<b>678,863</b>
<b>TOTAL ESTIMATED DEMANDS<sup>1</sup></b>	<b>629,198</b>	<b>694,147</b>	<b>725,006</b>	<b>743,990</b>	<b>770,765</b>
<b>DIFFERENCE<sup>2</sup></b>	<b>37,486</b>	<b>(12,448)</b>	<b>(42,623)</b>	<b>(63,907)</b>	<b>(91,902)</b>

<sup>1</sup> With Conservation.

<sup>2</sup> Potential shortages would be met from carryover storage and management actions.

Source: San Diego County Water Authority 2015 Urban Water Management Plan.

**TABLE 3-4  
MULTIPLE DRY WATER YEAR SUPPLY AND DEMAND  
ASSESSMENT (AFY)**

<b>Scenario</b>	<b>Near Term</b>			<b>Long Term</b>		
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>
<b>Multiple Dry Years</b>						
Demands	491,000	495,910	500,869	749,030	756,521	764,086
Supply	525,710	558,634	586,587	720,576	678,564	642,327
Potential Surplus or (Shortage) <sup>1</sup>	34,710	62,724	85,718	(28,454)	(77,957)	(121,759)

<sup>1</sup> Potential shortages would be offset through carryover storage and management actions.

Source: San Diego County Water Authority 2015 Urban Water Management Plan.

## Otay Water District

Once water is made available by SDCWA, it is transferred across San Diego County in two aqueducts containing five large-diameter pipelines. The First Aqueduct includes Pipelines 1 and 2, and the Second Aqueduct includes Pipelines 3, 4 and 5. The OWD maintains several connections to Pipeline 4, which delivers filtered water from the MWD filtration plant at Lake Skinner in Riverside County.

In San Diego County, OWD provides water services to southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, and Otay Mesa along the international border with Mexico. OWD covers approximately 80,000 acres, and has approximately 47,000 connections. OWD has approximately 709 miles of pipelines, 24 pump stations, and 40 reservoirs with a total storage capacity of 226 million gallons (mg). OWD provides approximately 90 percent of its water service to residential land uses, and 10 percent to commercial and industrial land uses. Average annual consumption for OWD is approximately 30,000 af. OWD maintains five major systems to supply and deliver water, which include Hillsdale, Regulatory, La Presa, Central, and Otay Mesa.

In addition, OWD's Flow Control Facility No. 14 and the Jamacha Road Pipeline delivers filtered water from the R.M. Levy Water Treatment Plant which is owned and operated by the Helix Water District. However, this connection currently supplies water to the north portion of OWD only. Furthermore, OWD maintains a connection to the City of San Diego's water system in Telegraph Canyon Road and has an agreement which allows the District to receive water from the Lower Otay Filtration Plant.

In June 2016, OWD's Board of Directors adopted the updated OWD 2015 UWMP. Sections 2, 3, and 4 of the 2015 UWMP provides an overview of OWD's service area, its current water supply sources, supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs. Section 5 of the 2015 UWMP contains OWD's water service reliability assessment. This section states that the level of reliability is based on the documentation in the UWMP's prepared by MWD and SDCWA and that these agencies have determined they will be able to meet potable water demands through 2040, during normal and dry year conditions. According to the 2015 UWMP, OWD currently relies on MWD and SDCWA for its potable supply, and OWD has worked with these agencies to prepare consistent demand projections for OWD's service area.

## POTABLE WATER

The OWD will supply water to the Sunbow II, Phase 3 project from the 624 Zone of the District's Central Area System. The 624 Zone accesses water from the SDCWA aqueduct by Otay Flow Control Facilities Number 10 and 12, which fill 624 Pressure Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 and 980 Zone storage and distribution systems.

To receive potable water service, the Sunbow II, Phase 3 project will need to expand the existing 624 Zone. The following details the existing potable water facilities located in the vicinity of the project.

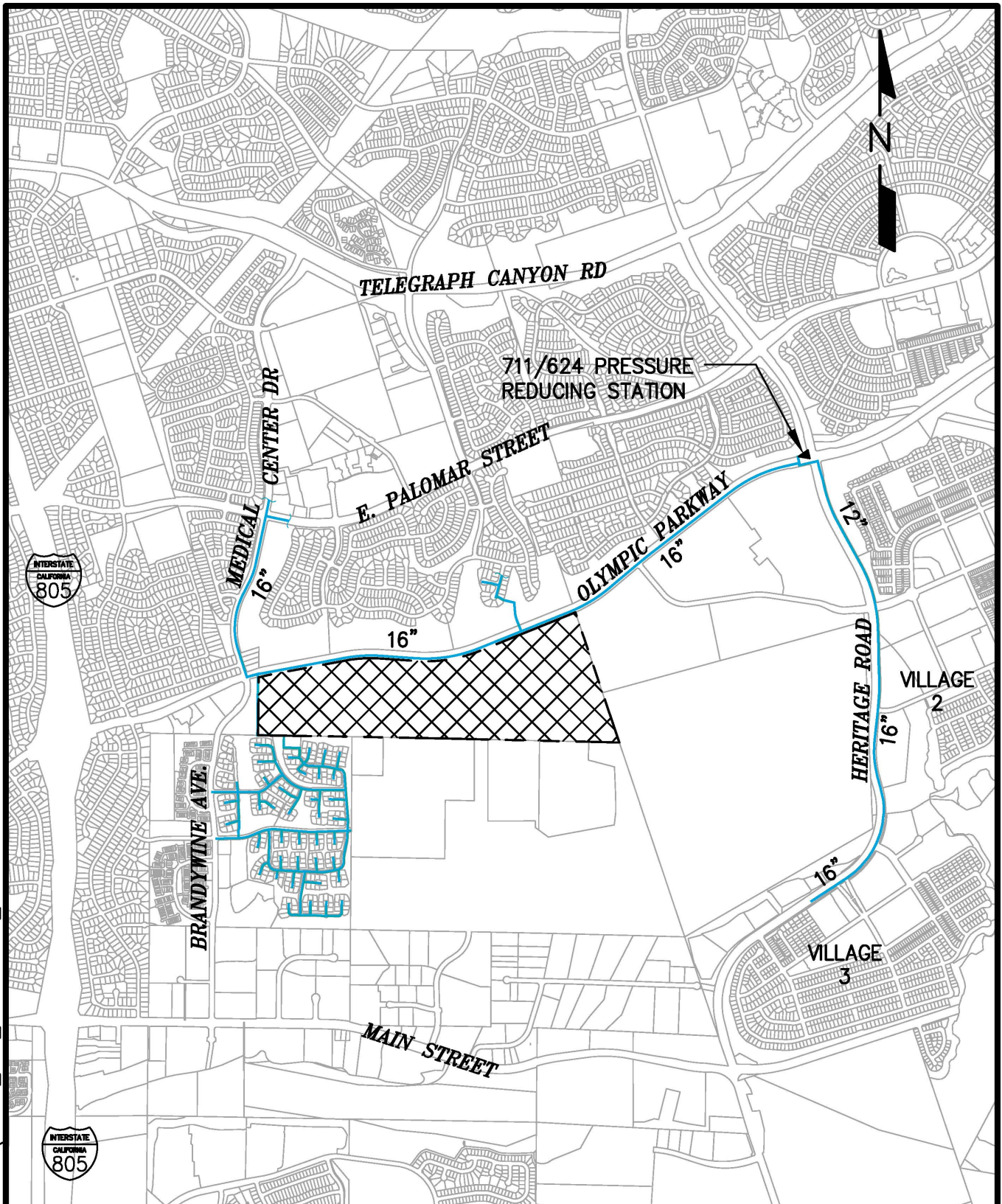
### **624 Zone**

There are three existing reservoirs in the 624 Zone, located along the SDCWA aqueduct east of the project. The 624-1 Zone reservoir is located near the SDCWA Otay No. 12 aqueduct connection and has a capacity of 12.4 million gallons (MG). The 624-2 Zone reservoir is located north of Otay Lakes Road near the SDCWA Otay No. 10 connection and has a capacity of 8.1 MG. The 624-3 Zone reservoir is located just south of the 624-1 Zone reservoir and has a capacity of 30 MG.

There are major transmission lines from these reservoirs to convey water to the various 624 Zone use areas and to supply 711 Zone and 980 Zone pump stations. In the vicinity of the Sunbow II, Phase 3 project, there are 16-inch transmission lines in Medical Center Drive, Paseo Ladera, and Olympic Parkway. Figure 3-1 provides the location of existing 624 Zone facilities in the vicinity of the project.



\\ARTIC\DWG\509116\REPORT\SPA23\_WTR\FIGURE-3-1\_EXWTR.DWG 06-17-20 14:32:00 LAYOUT: LAYOUT



**LEGEND**

- PROJECT BOUNDARY
- EXISTING 624 ZONE WATER LINE

DEXTER WILSON ENGINEERING, INC.  
CONSULTING ENGINEERS  
(760) 438-4422

**FIGURE 3-1**

**EXISTING  
WATER FACILITIES**

SUNBOW II, PHASE 3

## **CHAPTER 4**

### **RECOMMENDED WATER FACILITIES**

The Sunbow II, Phase 3 project site will receive water service by expanding the existing 624 Zone water system. Figure 4-1 provides the recommended water facilities for the project. As discussed previously, a private water system analysis will be prepared prior to review and approval of final engineering improvement plans for the Sunbow II, Phase 3 project to identify the sizing of all water facilities for the project.

Water service to the project is proposed to be provided by making two domestic service connections and two fire service connections to the existing 624 Zone transmission line in Olympic Parkway. An onsite private loop will be constructed for domestic and fire protection systems from these connections. A master meter and backflow preventer will be provided at each domestic connection and a backflow preventer will be provided at each fire service connection.

The development pads on the project will range in elevation from approximately 370 feet to 420 feet. With service provided from the 624 Zone, this will result in maximum static pressures ranging from 88 to 110 psi. Figure 4-1 provides the proposed water system for the project.

### **RECYCLED WATER**

Recycled water is proposed to be used at all common landscaped areas within the project as well as the irrigated areas of the private open space/CPF cite. There is a 680 Zone recycled water line in Olympic Parkway adjacent to the project. It is proposed to connect to this line and set a meter(s) such that all onsite irrigation piping will be private. Service from the 680 Zone will result in static pressures of 113 psi and 134 psi in the developed areas. Pressures at irrigated slopes will vary from this and the landscape architect will verify the ability to serve all irrigated areas of the project from the 680 Zone.



FIGURE 4-1

## PROPOSED WATER SYSTEM

SUNBOW II, PHASE 3

## **APPENDIX A**

### **LAND USE PROJECT DESCRIPTION**

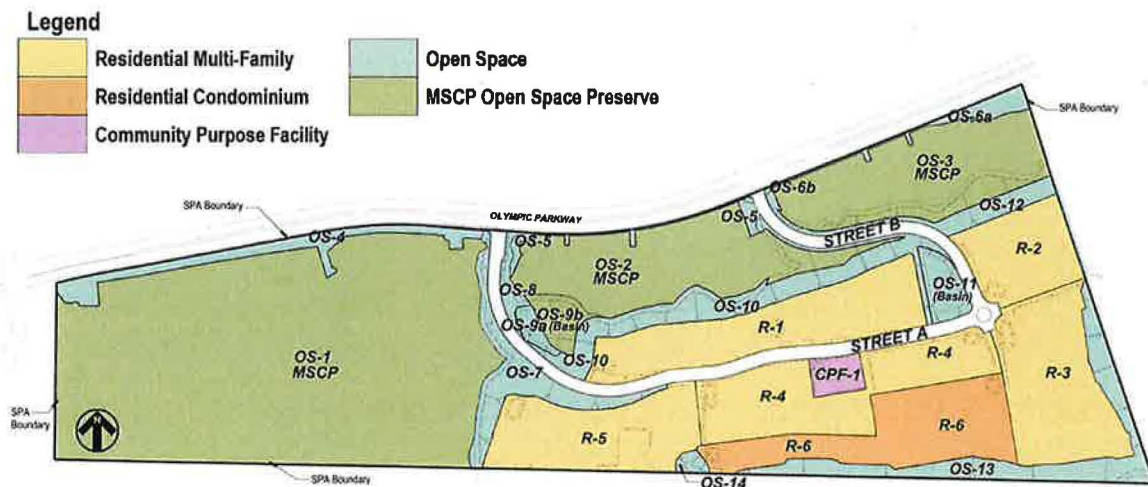
**Sunbow II, Phase 3  
Project Description  
Revised 9/17/2020**

Sunbow II, Phase 3 Sectional Planning Area (SPA) Plan Amendment encompasses approximately 135.7<sup>1</sup> acres (Project Area) that includes a 67.5 development area comprised of 44.2 acres of residential, a 0.9-acre Community Purpose Facility (CPF) site, 5.9 acres of public streets and 16.5 manufactured slopes/basins/wetland resource and associated buffer area. Approximately 4.3 acres of conserved Poggi Canyon Easement areas, a 0.3 acre wetland avoidance area and 63.6<sup>2</sup> acres of adjacent MSCP Preserve area are also within the Project Area.

The Proposed Project's residential land use includes four unique multi-family attached residential product types with 15 unique floor plans, ranging in square footage from approximately 1,100 to 2,050 square feet in two- and three-story units. Each home includes a two-car garage and two to four bedrooms.

The Proposed Project includes a Chula Vista General Plan Amendment, Sunbow General Development Plan Amendment, Sunbow II SPA Plan Amendment, a rezone, and a Tentative Map. The Proposed Project also includes a Chula Vista MSCP Boundary Adjustment to implement minor adjustments to the development limits and the adjacent MSCP Preserve areas that would result in a 0.09-acre increase to MSCP Preserve Area and an MSCP Minor Amendment to address off-site grading adjacent to the southwestern boundary of the development area.

**Sunbow II, Phase 3 Site Utilization Plan (revised)**



<sup>1</sup> Acreages are rounded to the nearest 1/10<sup>th</sup> acre and may vary slightly from calculated total.

<sup>2</sup> The Proposed MSCP area includes approximately 1.31 acres of "Mapping Correction Area" and approximately 1.12 acres of MSCP Allowable Use (Basin – Future Facility).



**Sunbow II, Phase 3 Site Utilization Table**

Sunbow II, Phase 3	Land Use District	Acres <sup>3</sup>	Units	Density
<b>Multi-Family Residential</b>				
R-1	RM	8.5	131	15.4
R-2	RM	4.6	73	15.8
R-3	RM	8.1	108	13.3
R-4	RM	8.2	118	14.4
R-5	RM	7.1	104	14.7
R-6	RC	7.6	184	24.1
<b>Subtotal Residential</b>		<b>44.2</b>	<b>718</b>	<b>16.3</b>
<b>Other</b>				
Community Purpose Facility	CPF	0.9		
MSCP Preserve Conserved Open Space (OS-1,2, 3 and OS-9b)	OSP	63.6		
Poggi Creek Easement Conserved Area (OS-4, 5, 6a and 6b)	OS	4.3		
Manufactured Slopes/Basins (OS-7, 8, 9a 10 -13)	OS	16.5		
Wetland Avoidance Area (OS-14)	OS	0.3		
Public Streets	Circulation	5.9		
<b>Subtotal Other</b>		<b>91.5</b>		
<b>TOTAL</b>		<b>135.7</b>	<b>718</b>	<b>16.3</b>

<sup>3</sup> Acreages rounded to nearest 1/10<sup>th</sup> acre and may vary slightly from the calculated total.

## Sunbow II, Phase 3 Surrounding Land Uses

