



# Ocean Kamp

## Water Supply Assessment and Verification (WSAV)

**DRAFT**

Prepared for:



City of Oceanside  
300 North Coast Hwy  
Oceanside, CA 92054

**April 16, 2020**

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# EXECUTIVE SUMMARY

## Purpose of Water Supply Assessment and Water Supply Verification

The purpose of this Water Supply Assessment and Water Supply Verification (WSAV) is to perform the assessment required by California Water Code sections 10910 through 10915, Public Resources Code Section 21151.9, and Government Code section 66473.7, as established by Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221), regarding the proposed Ocean Kamp Mixed-use Development (Project). Together, SB 610 and SB 221 seek to promote more collaborative planning between local water suppliers and 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 environmental documentation of certain proposed projects.

Infrastructure Engineering Corporation (IEC) prepared this WSAV for the City of Oceanside (City) for the Project. This WSAV evaluates the adequacy of the City's total projected water supplies to meet the City's existing and projected future water demands, including those water demands associated with the Project, under all hydrologic conditions (Normal Years, Single Dry Years, and Multiple Dry Years) during a 20-year projection. This WSAV Report has been independently reviewed by the City and will be included as part of the Environmental Impact Report (EIR) prepared by the developer pursuant to the California Environmental Quality Act (CEQA).

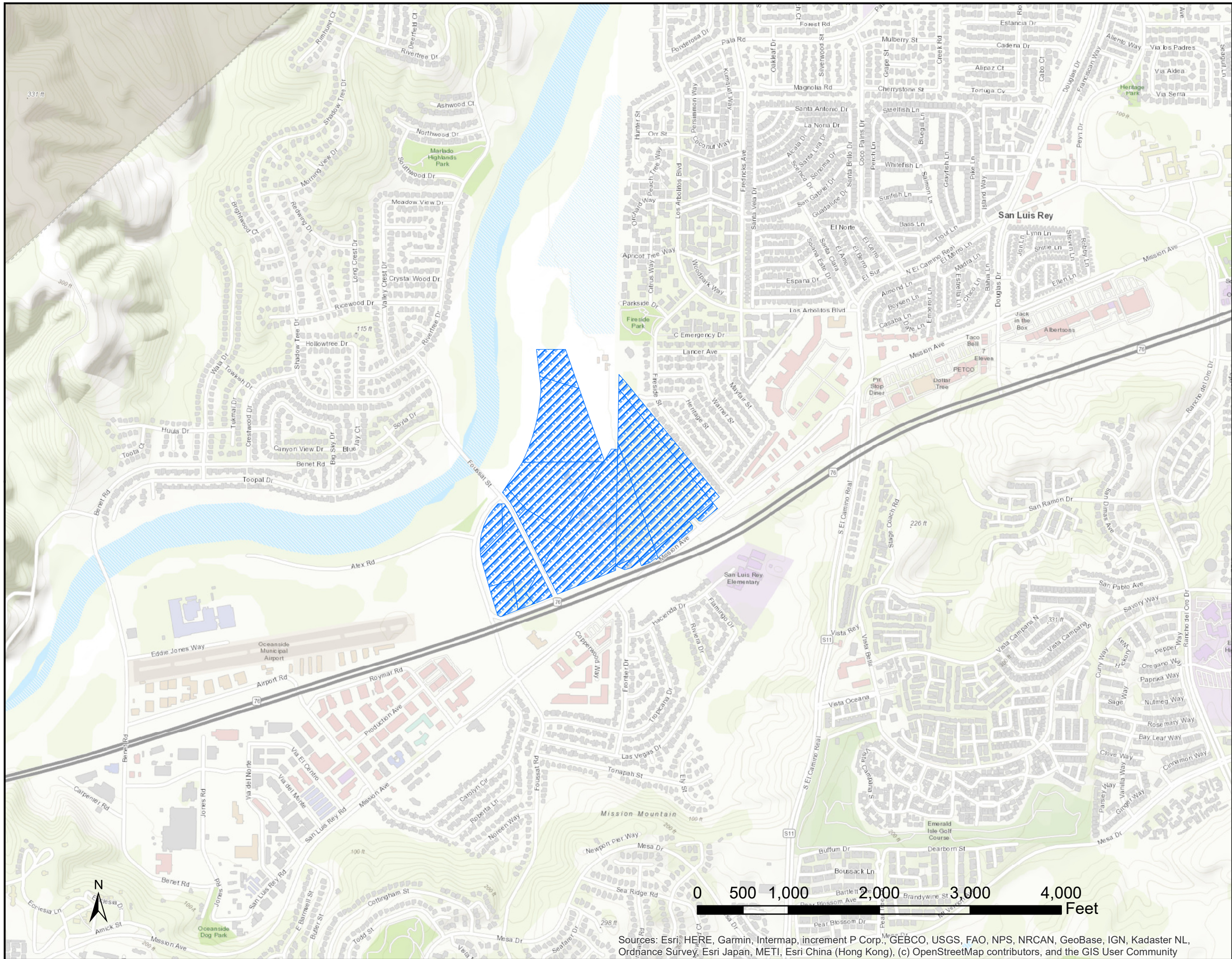
## Ocean Kamp Mixed-Use Development Project Overview and Water Use

The Ocean Kamp Mixed-used development project (Project) is located northeast of the intersection of Foussat St and California State Route 76 (SR 76) at the former Oceanside Swap Meet site. The Project comprises of 14 parcels with a total area of approximately 92 acres and proposes to include approximately 700 multi-family residential units, a 300-room resort hotel, approximately 253,000 square feet (sf) of commercial space, and an approximately 1.7-acre of wave pool.<sup>1</sup>


The Project site is currently zoned as Community Commercial (CC) under the City's Zoning Ordinance and General Plan, and is subject to approval of a Mixed-Use Development Plan and Conditional Use Permit. **Figure 1** shows the location of the Project site.


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<sup>1</sup> Based on T19-00004 Ocean Kamp Mixed-Use Development, Description and Justification, and Ocean Kamp Overall Site Plan



**Legend**

 Ocean Kamp Project Site



City of Oceanside  
Water Supply Assessment  
and Verification

**Project Location**

**Figure 1**

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

## Projected Potable Water Demand for the Project

The projected potable water demand at buildout of the Project is estimated to be 361,790 gallons per day (GPD) or 405 acre-feet per year (AFY). About 60% of the Project site are currently vacant, and the remainder was a former Oceanside Swap Meet site. Therefore, existing water consumption of the Project site is minimal.

The estimated Project demand accounts for approximately 4.1% of the projected demand increase by 2040 documented in the City's 2015 Urban Water Management Plan (UWMP). The City's continued implementation of conservation measures could ensure adequate supply is maintained to the project and existing/planned customers.

## Summary of Projected Water Supply Availability and Reliability

The City's 2015 UWMP projects 100% supply reliability under normal year and single-dry year conditions. Under multiple dry year conditions, the City's total water demand is estimated to exceed the total supply by approximately 3% and 7% for the third year of 2035 and 2040, respectively. Details of the City's ability to provide sufficient supplies are discussed in Chapters 5 and 6 below.

Sufficient water supplies will be available to meet the demands of the Project during average/normal, single-dry, and multiple-dry years. This is mainly due to total water demands of the planned developments by 2040 are within the projected demand increase from the 2015 UWMP. In addition, the City can increase in supply through the purchases of raw and treated water, reliable local groundwater, and continued augmentation of recycled water use in new as well as established parts of the City's service area, which is anticipated to offset potable demand. The City also continues to find ways to expand its water supply portfolio, for example, via its indirect potable reuse project. The City has investigated the use of desalinated water as a potential supply source. Although, the desalination option is physically feasible, the City is implementing other less expensive options first. Therefore, desalinated water as a supply source has not been considered for this assessment. In the event supply shortages do occur in the future, the City may invoke its Water Shortage Contingency Plan, as described in its 2015 UWMP, which provides a comprehensive and proactive approach to shortage response planning.

Therefore, pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this WSAV and the 2015 UWMP, the projected demands for Ocean Kamp Mixed-Use Development can be met by the City during normal, single-dry, and multiple-dry years within a 20-year projection.

# Chapter 1. Introduction

## 1.1. Need for and Purpose of Water Supply Assessment and Water Supply Verification

On January 1, 2002, California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) took effect. The intent of SB 610 and SB 221 was to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Specifically, certain sections of the California Water Code and Government Code were amended to require coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted; and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

Under SB 610, if a development is a “Project”<sup>2</sup> as defined by the Water Code Section 10912, the water purveyor responsible for delivering water to the Project must be identified and must prepare a WSA. The City has a public water system of over 3,000 service connections and will provide water services to the site, therefore, is responsible for preparing the SB 610 assessment. The WSA is to be included in the CEQA environmental documentation and approval process for certain proposed projects and demonstrate that the water purveyor has sufficient water supplies to satisfy the water demands of the proposed development while still meeting the current and projected water demands of existing customers, and under various hydrologic conditions.

SB 221 requires an affirmative written verification from the water purveyor of the public water system that sufficient water supplies are available for certain residential subdivisions<sup>3</sup> prior to approval of a tentative map. SB 221 was intended to act as a fail-safe mechanism to ensure that collaboration occur between the water supplier and a city or county to ensure adequate water supplies before the start of construction on new, large developments.

A foundational document for compliance with both SB 610 and SB 221 is the UWMP. Cities, counties, water districts, property owners, and developers utilize UWMPs as an important document in a planning context (i.e. updating a General Plan) and when proposing new projects. The City’s 2015 UWMP is used as the primary reference for this WSAV. Other planning documents consulted include, but not limited to, the City’s 2015 Water Master Plan

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<sup>2</sup> The Ocean Kamp Mixed-Use Development meets the definition of “Project” per Water Code Section 10912 (a):

(1) A proposed residential development of more than 500 dwelling units.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

<sup>3</sup> The term “subdivision” refers to a proposed residential development of more than 500 dwelling units per Government Code Section 66473.7(a)(1).

(WMP), the City’s 2015 Water Conservation Master Plan (WCMP), and the Ocean Kamp Mixed-Use Development Plan documents.

## 1.2. Report Organization

The Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 (Guidebook) provides general guidance on the preparation of water supply assessments and verifications. Chapters 2 through 4 of the WSA report are organized to follow Sections 1 through 17 of the Guidebook as shown in Table 1-1. For reference, relevant citations to the Water Code and the Government Code are included throughout this WSA, with the language applicable to this WSA italicized.

**Table 1-1: WSA Chapters aligned with Guidebook Sections**

WSA Chapters	SB 610 Guidebook Sections	SB 221 Guidebook Sections
Chapter 2.0 Project Description	<ul style="list-style-type: none"> <li>• <b>Section 1:</b> Does SB 610 apply to the proposed development?</li> <li>• <b>Section 2:</b> Who will prepare the SB 610 assessment?</li> <li>• <b>Section 3:</b> Has an assessment already been prepared that includes this project?</li> <li>• <b>Section 4:</b> Is there a current Urban Water Management Plan?</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 9:</b> Does the SB 221 apply to this subdivision?</li> <li>• <b>Section 10:</b> Is the subdivision exempt from SB 221?</li> <li>• <b>Section 11:</b> Who will prepare the SB 221 verification of sufficient water supply?</li> <li>• <b>Section 12:</b> Has a verification already been prepared for this subdivision?</li> </ul>
Chapter 3.0 Water Demand  Chapter 4.0 Water Supply	<ul style="list-style-type: none"> <li>• <b>Section 5:</b> What information should be included in an assessment?</li> <li>• <b>Section 6:</b> Is the projected water supply sufficient or insufficient for the proposed project?</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 13:</b> What information should be included in a verification?</li> <li>• <b>Section 14:</b> Determining if the projected water supply is sufficient for the subdivision</li> </ul>
Chapter 5.0 Potable Water Supply Reliability  Chapter 6.0 Determination of Water Supply Sufficiency	<ul style="list-style-type: none"> <li>• <b>Section 7:</b> Requirements if the projected supply is determined to be insufficient</li> <li>• <b>Section 8:</b> Final SB 610 assessment actions by the lead agency</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 15:</b> Requirements if the projected supply is determined to be insufficient</li> <li>• <b>Section 16:</b> Final SB 221 verification actions by agency</li> <li>• <b>Section 17:</b> Special Circumstances</li> </ul>

## Chapter 2. Project Description

### 2.1. Project Location

The Ocean Kamp Mixed-Use Development Project (Project) is located northeast of intersection of Mission Ave and California State Route 76 (SR 76) within the City of Oceanside. The Project site comprises of approximately 92 acres with 14 parcels as shown in **Figure 1**.

### 2.2. SB 610 and SB 221 Apply to the Project

#### 2.2.1. Regulations

##### SB 610

##### California Water Code Section 10910

- (a) *Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code), under Section 21080 of the Public Resources Code shall comply with this part.*

##### California Water Code Section 10912

*For the purposes of this part, the following terms have the following meanings:*

- (a) *“Project” means any of the following:*
- (1) *A proposed residential development of more than 500 dwelling units.*
  - (2) *A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*
  - (3) *A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*
  - (4) *A proposed hotel or motel, or both, having more than 500 rooms.*
  - (5) *A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*
  - (6) *A mixed-use project that includes one or more of the projects specified in this subdivision.*
  - (7) *A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.*

##### SB 221

**Government Code Section 65867.5**

- (c) *A development agreement that includes a subdivision, as defined in section 66473.7, shall not be approved unless the agreement provides that any tentative map prepared for the subdivision will comply with the provisions of section 66473.7.*

**Government Code Section 66473.7**

- (a) *For the purposes of this section, the following definitions apply:*
- (1) *“Subdivision” means a proposed residential development of more than 500 dwelling units, except that for a public water system that has fewer than 5,000 service connections, “subdivision” means any proposed residential development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections*
- (b) (1) *The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.*
- (i) *This section shall not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households.*

**2.2.2. The Project is subject to SB 610 and SB 221**

The Project proposes a mixed-use development consisting commercial and residential uses, which is consistent with the Zoning Ordinance and is subject to approval of a Mixed-Use Development Plan and Conditional Use Permit. Commercial uses are proposed to be located within the central/southwestern portion of the project site where the former swap meet site is located. Proposed commercial uses include a 300-room resort hotel, approximately 253,000 SF of retail, restaurants, and office space; and a variety of recreational uses including a wave lagoon. The residential uses are proposed to be located at northern and eastern portions of the project site that are currently vacant. Proposed residential uses include approximately 700 multi-family residential units. Approximately 20 acres of the site will be preserved as open space.

Per the Water Code Section 10912 (a) (1) and (6), the Project is subject to the SB 610 assessment. The City was not identified in the list of the 2010 Census urbanized areas and

urban clusters<sup>4</sup> and the site proposed for residential development has not been previously developed for urban uses. Per Government Code Section 66473.7 (a) and (i), the Project is subject to SB 221 written verification of sufficient water supply.

## 2.3. Project Water Supplier

### 2.3.1. Regulations

#### SB 610

##### California Water Code Section 10910

- (b) *The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.*

##### California Water Code Section 10912

- (a) *“Public water system” means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. A public water system includes all of the following:*
- (1) *Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.*
  - (2) *Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.*
  - (3) *Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption*

#### SB 221

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<sup>4</sup> Source: Federal Register, Qualifying Urban Areas for the 2010 Census (<https://www.federalregister.gov/documents/2012/03/27/2012-6903/qualifying-urban-areas-for-the-2010-census>)

**Government Code Section 66473.7**

(a) (3) *“Public water system” means the water supplier that is, or may become as a result of servicing the subdivision included in a tentative map pursuant to subdivision (b), a public water system, as defined in Section 10912 of the Water Code, that may supply water for a subdivision.*

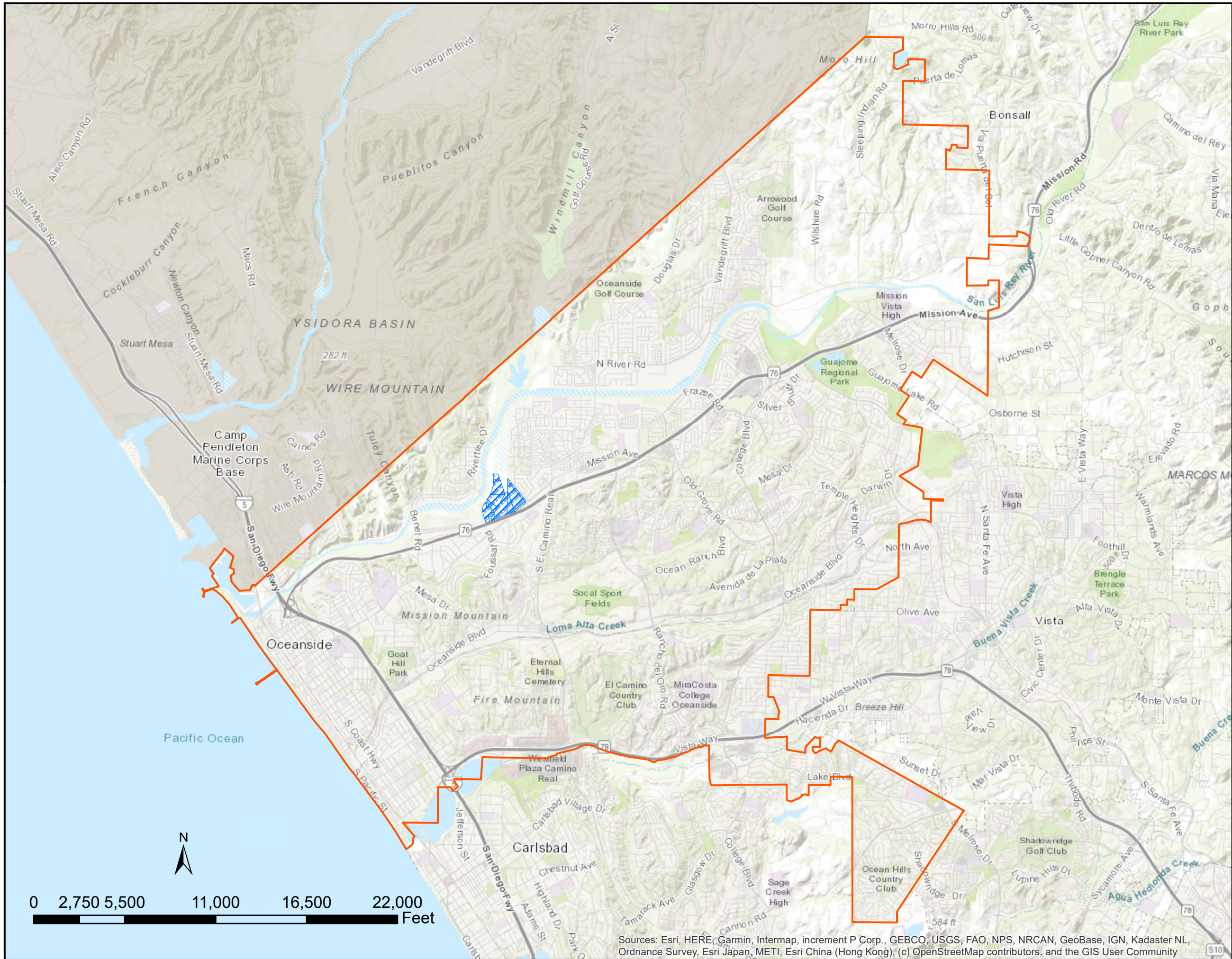
**2.3.2. The City of Oceanside is the Water Supplier for the Project and Preparer of this Water Supply Assessment and Verification**

The City of Oceanside is located in northern San Diego County, encompassing approximately 42 square miles. The City is bordered by the Pacific Ocean to the west, Camp Pendleton Marine Base to the north, the City of Carlsbad to the south, and the City of Vista and unincorporated San Diego County to the east. The location of the City is shown in **Figure 2**.

The City delivers water throughout the City’s water service area for domestic, industrial, commercial, irrigation, and fire protection purposes. At present, the City’s potable water supply portfolio includes purchased water from the San Diego County Water Authority (SDCWA) and local groundwater from the Mission Basin, which is treated at the Mission Basin Groundwater Purification Facility (MBGPF). Additionally, the City provides recycled water treated at the San Luis Rey Water Reclamation Facility (SLRWRF) for non-potable use to offset demands from potable water.

The City’s water distribution system consists of approximately 28 pressure zones, 574 miles of pipeline, 8 groundwater wells, 12 storage reservoirs, 9 booster pumping stations, 2 water supply pump stations located at the MBGPF, 5 imported water connections, 54 pressure regulating stations (PRS), and 7 altitude valves. These facilities serve more than 43,300 service connections.

Since the Project is located within the service area of the City of Oceanside, pursuant to Water Code Sections 10910 (b) and 10912 (c), as well as Government Code Section 66473.7, the City is the designated water supplier and preparer of this SB 610 WSA and SB 221 Verification of Sufficient Water Supply.



### Legend

- Oceanside
- Ocean Kamp Project Site

**Infrastructure**  
ENGINEERING CORPORATION

City of Oceanside  
Water Supply Assessment  
and Verification

**Water Service Area**

**Figure 2**

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

## 2.4. Urban Water Management Plan

### 2.4.1. Regulations

#### SB 610

##### California Water Code Section 10910

- (c) (1) *The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*
- (2) *If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g)*
- (3) *If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system as no urban water management plan, the water assessment for the project shall include a discussion with regard to whether the public water system's 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.*

#### SB 221

##### Government Code Section 66473.7

- (a) *For the purposes of this section, the following definitions apply:*
- (1) *“Subdivision” means a proposed residential development of more than 500 dwelling units, except that for a public water system that has fewer than 5,000 service connections, “subdivision” means any proposed residential development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections.*
- (b) (1) *The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or*

*local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.*

- (c) *The applicable public water system's written verification of its ability or inability to provide a sufficient water supply that will meet the projected demand associated with the proposed subdivision as required by subdivision (b) shall be supported by substantial evidence. The substantial evidence may include, but is not limited to, any of the following:*

*(1) The public water system's most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code.*

*(2) A water assessment that was completed pursuant to Part 2. 10 (commencing with Section 10910) of Division 6 of the Water Code.*

*(3) Other information relating to the sufficiency of the water supply that contains analytical information that is substantially similar to the assessment required by Section 10635 of the Water Code.*

- (i) *This section shall not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households.*

#### **2.4.2. UWMP is a Primary Reference for this WSAV Concerning Water Supply and Demand for Existing, Near-term, and Future Conditions**

Per the Guidebook for Implementation of SB 610 and SB 221 of 2001 (Guidebook) that was prepared by the California Department of Water Resources, the UWMP is a good source of information for developing an assessment and verification of supply (Water Code Section 10910 (c) and Government Code Section 66473.7). The City's most recent adopted 2015 UWMP is used as a primary reference for this WSAV. Since the City's 2015 UWMP did not clearly specify development projects included in water demand forecasts, instead, it took consideration of the potential future development demands in a different approach. Future water demands were projected based on baseline land use water unit factors and forecasted increases in population and employment growth. Therefore, other planning documents such as the City's 2015 Water Master Plan (2015 WMP) and its 2015 Water Conservation Master Plan (2015 WCMP) have been relied in preparation of this WSA, consistent with SB 221 and SB 610.

### **2.5. Project Water Demand**

## 2.5.1. Regulations

### SB 610

#### California Water Code Section 10631 (Urban Water Management Plan Requirements)

- (a) *Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available....*
- (e) (1) *Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:*
- (A) Single-family residential.*
  - (B) Multifamily.*
  - (C) Commercial.*
  - (D) Industrial.*
  - (E) Institutional and governmental.*
  - (F) Landscape.*
  - (G) Sales to other agencies.*
  - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.*
  - (I) Agricultural.*
- (2) *The water use projections shall be in the same five-year increments described in subdivision (a).*

## 2.5.2. Water Demand Projections

The City's 2015 UWMP estimated water demand within its service area through 2040 using the Decision Support System (DSS Model) tool, which was used to project water use in the 2015 WCMP that was prepared concurrently. Planned future developments were not articulately specified in future demand forecasts in the 2015 UWMP. Expected future development demands were accounted for in a different approach by forecasting future demands based on baseline water unit factors by customer category, population and employment growth, and planned water savings. The baseline water unit factors were determined based on an analysis of historical water billing data of 2007 to 2011 by customer category. The population projections used to generate the future residential water demands was based upon the 2020 – 2045 population forecasts from the San Diego Association of Governments (SANDAG) Series 13 Growth Forecast, and the employment projections used to generate the future non-



residential water demands was based on the SANDAG’s Series 13: 2050 Regional Growth Forecast published on October 15, 2013.<sup>5</sup>

SANDAG coordinated with the City to collect and verify detailed existing and planned land use inputs and guidance (including information from the General Plan), which information was used by SANDAG to develop population and employment forecasts and to project future development patterns for the City throughout 2050.

### 2.5.2.1. Project Water Demand Calculation

The Project proposes a mix of commercial and residential uses including a 300-room resort hotel, approximately 253,000 SF of commercial building area including retail, restaurants, and office space, a variety of recreational uses and amenities including a wave lagoon. The Project is estimated to serve a residential population of 1,995 persons, and generate employments of 715 jobs.<sup>6</sup>

Project demand is projected using the recommended water demand unit factors recommended in the 2015 WMP. Since the Project has specified the proposed building area for commercial uses, and the 2015 WMP does not recommend a water demand unit factor based on commercial building area, commercial water demand unit factors based on building areas from similar studies of different agencies from Southern California were compared, as presented in **Table 2-1**.

**Table 2-1. Commercial Water Demand Unit Factors Comparison**

Agency	Office Water Unit Factor (gpd/1000 sq. ft.)	Retail Water Unit Factor (gpd/1000 sq. ft.)	Commercial Water Unit Factor (gpd/1000 sq. ft.)	Source
City of Los Angeles	165	88	127	<a href="https://planning.lacity.org/eir/PlayaVista/PlayaVistaDEIR/DI_SK1/text/Book_3/4-N.(1)%20Water%20Consumption.pdf">https://planning.lacity.org/eir/PlayaVista/PlayaVistaDEIR/DI_SK1/text/Book_3/4-N.(1)%20Water%20Consumption.pdf</a>
City of Santa Barbara	54	134	152	<a href="https://www.santabarbaraca.gov/civicax/filebank/blobdload.aspx?BlobID=34156">https://www.santabarbaraca.gov/civicax/filebank/blobdload.aspx?BlobID=34156</a>
City of Chula Vista	-	-	80	<a href="https://www.chulavistaca.gov/Home/ShowDocument?id=2268">https://www.chulavistaca.gov/Home/ShowDocument?id=2268</a>
City of Anaheim	60	-	195	<a href="https://www.anaheim.net/DocumentCenter/View/3072/Appendix-G-Water-Supply-Assessment">https://www.anaheim.net/DocumentCenter/View/3072/Appendix-G-Water-Supply-Assessment</a>
City of Long Beach	200	100	100	<a href="http://longbeach.gov/globalassets/lbds/media-library/documents/planning/environmental/environmental-reports/pending/2016-land-use-element-lueurban-design-element-ude/4-9-utilities">http://longbeach.gov/globalassets/lbds/media-library/documents/planning/environmental/environmental-reports/pending/2016-land-use-element-lueurban-design-element-ude/4-9-utilities</a>

<sup>5</sup> Source: City of Oceanside 2015 Water Conservation Master Plan

<sup>6</sup>Source: Ocean Kamp Fiscal and Economic Impact Analysis prepared by Economic & Planning Systems, Inc dated December 19,2019



**Table 2-1. Commercial Water Demand Unit Factors Comparison**

Agency	Office Water Unit Factor (gpd/1000 sq. ft.)	Retail Water Unit Factor (gpd/1000 sq. ft.)	Commercial Water Unit Factor (gpd/1000 sq. ft.)	Source
Average	93	111	131	

Commercial water unit factor of 130 gpd/1000 sq. ft. is recommended to be used for the commercial water demand calculation for this assessment based on the comparison shown in **Table 2-1**.

Water demand estimated for the wave lagoon is based on the **Water System Analysis for the Ocean Kamp Project** prepared by Dexter Wilson Engineer, Inc on March 13, 2020.

Project estimated demand calculations are presented in **Table 2-2**.

**Table 2-2. Ocean Kamp Project Water Demands Estimation**

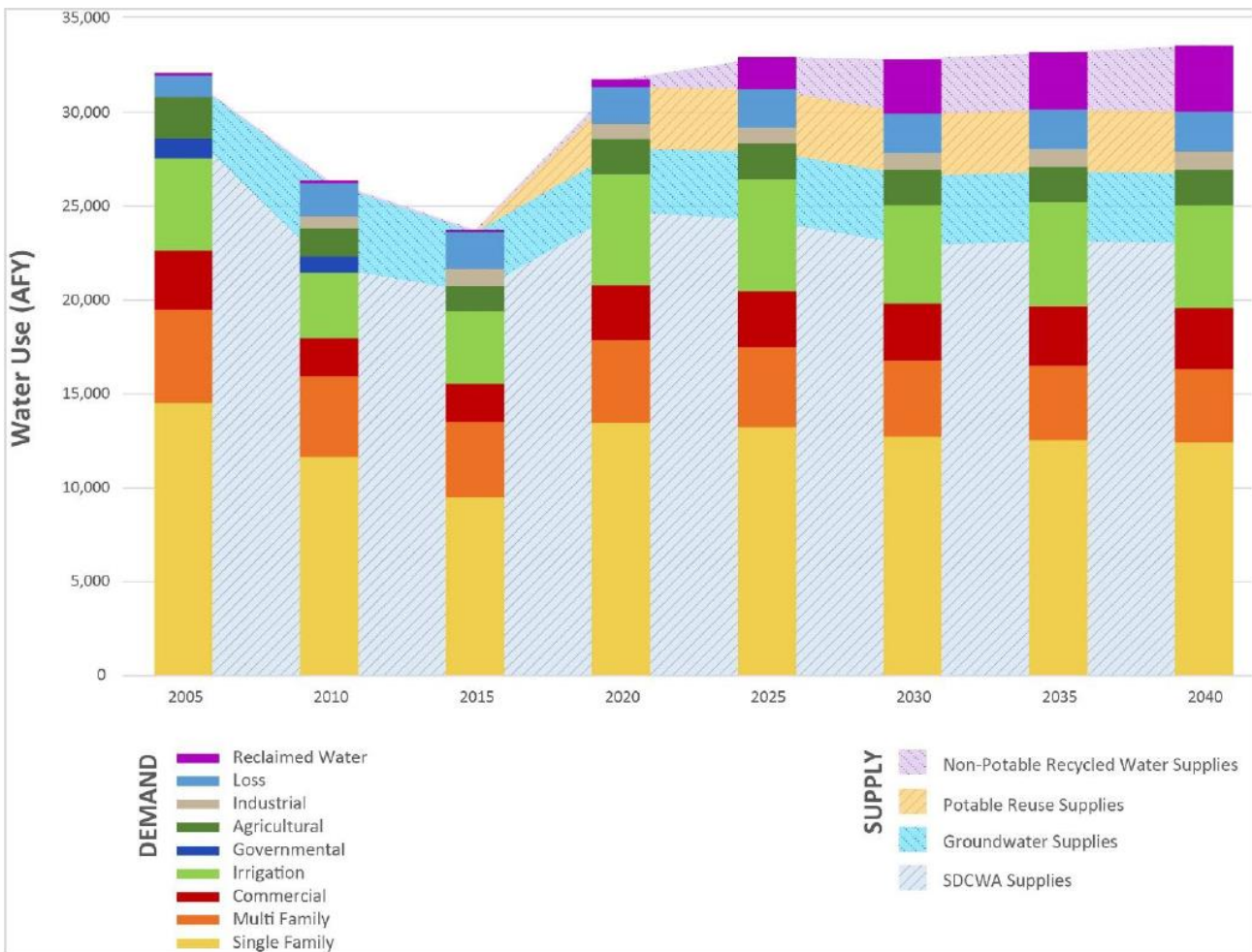
Land Use	Quantity	Water Unit Factor	Demand (gpd)
Commercial	253,000 SF	130 gpd/1000 sq. ft	32,890
Hotel	300 rms	115 gpd/room	34,500
Wave Pool	1.7 acres	-	14,400
Residential	700 units	400 gpd/unit	280,000
<b>Total (gpd)</b>			<b>361,790</b>
<b>Total (AFY)</b>			<b>405</b>

# Chapter 3. Water Demand

## 3.1. Historical Potable and Recycled Water Demands

The City serves more than 43,300 service connections. Significant reductions in water consumption have been recognized in the City since the implementation of emergency conservation regulations that were adopted by the State Water Board in 2014, as shown in **Figure 3, Historical Potable and Recycled Water Demands**.

**Figure 3. Historical, Current, and Projected Potable and Recycled Water Demands for City of Oceanside<sup>7</sup>**



<sup>7</sup> Source: Figure 4-1 of City's 2015 UWMP  
Water Demand

Based on the water demands projected in the 2015 UWMP and with assumption of linear increase on water demands between planning years, potable water demands for 2016 to 2019 were estimated as shown in **Table 3-1**. The actual total potable water usage for 2016 to 2019 were also shown in **Table 3-1** for comparison.

**Table 3-1. Projected and Actual Water Consumptions for 2016 to 2019**

Year	2016	2017	2018	2019
Projected Demand (AFY) <sup>8</sup>	25,319	26,921	28,524	30,126
Actual Use (AFY)	23,578	23,972	24,297	24,297

Actual water uses were substantially lower than the 2015 UWMP's projected demands. Reductions have been recognized through the City's implementation of conservation programs. The City continues the implementation of conservation programs, and it will most likely reduce overall water demands in the future.

### 3.2. Projected Future Potable and Recycled Water Demands

**Table 3-2** presents the City's projected potable and recycled water demand in 5-year increment from 2015 through 2040 as detailed in the 2015 UWMP. The water demand projection took into consideration the plumbing code saving and Conservation Program B.<sup>9</sup> Plumbing code includes current state and federal standards (including CALGreen, Senate Bill 407, and Assembly Bill 715) for items such as toilets, showerheads, faucets, and pre-rinse spray valve savings. Program B is the "Optimized Program" including existing water use efficiency measures, an Automated Metering Infrastructure (AMI), 2 CII targeted measures, a school education measure, a recycled water conversion measure, and an agriculture water audit measure.

<sup>8</sup> Demands are estimated based on the 2015 UWMP demand projection with linear interpolation.

<sup>9</sup> 2015 WCMP.



**Table 3-2: Total Water Demands (AFY)<sup>10</sup>**

Demand Type	2015	2020	2025	2030	2035	2040
Potable and Raw water	23,613	31,328	31,215	29,913	30,130	30,037
Recycled Water	104	400	1,700	2,900	3,060	3,500
<b>TOTAL WATER DEMAND</b>	<b>23,717</b>	<b>31,728</b>	<b>32,915</b>	<b>32,813</b>	<b>33,190</b>	<b>33,537</b>

<sup>10</sup> Source: 2015 City of Oceanside UWMP Table 4-4 Retail: Total Water Demands  
Water Demand

## Chapter 4. Water Supply

### 4.1. Regulations

#### SB 610

#### California Water Code Section 10910

- (d) (1) *The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*
- (2) *An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*
- (A) *Written contracts or other proof of entitlement to an identified water supply.*
  - (B) *Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
  - (C) *Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
  - (D) *Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*
- (e) *If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water assessments.*

### 4.2. Existing and Projected Supplies

At present, the City has three major water supply sources: SDCWA purchases, local groundwater from Mission Basin, and non-potable recycled water from San Luis Rey Water Reclamation Facility (SLRWRF). Approximately 86% of the City’s water is purchased from SDCWA. The City treats purchased, untreated water from SDCWA at the Robert A. Weese Water Filtration Plant. Approximately 13.5% of the City’s water comes from the Mission Basin. Brackish groundwater is extracted and becomes potable water through a desalting process at the Mission Basin Groundwater Purification Facility (MBGPF). The City also recycles wastewater at the SLRWRF and uses it to irrigate the Oceanside Municipal Golf Course. Recycled water comprises about 0.5% of total water use.

The City has plans to expand its recycled water system through both additional non-potable recycled water deliveries and an indirect potable reuse (IPR) project to increase water supply reliability. Seawater desalination use is also being considered by the City via a feasibility study.

**Table 4-1** provides a summary of the historical and projected supplies from each of these sources. The planned water supplies presented in **Table 4-1** are based on meeting the 2020 Gallons Per Capita Daily (GPCD) target for potable water. The planned water supplies are well below the contractual limits from SDCWA and the safe yield of groundwater extraction; therefore, the City can increase its supplies by purchasing additional imported water from SDCWA or extracting more groundwater from the Mission Basin, as needed.

**Table 4-1: Summary of Historical and Projected Supplies (AFY)<sup>11</sup>**

Supply Type	2010	2015	2020	2025	2030	2035	2040
Purchased SDCWA Supply	24,897	20,400	24,728	24,215	22,913	23,130	23,037
Groundwater	3,732	3,213	3,300	3,700	3,700	3,700	3,700
Recycled Water	119	104	400	1,700	2,900	3,060	3,500
(Non-Potable)							
Advanced Treated Water	0	0	3,300	3,300	3,300	3,300	3,300
(Potable Reuse)							

<sup>11</sup> Source: 2015 City of Oceanside UWMP, Table 6-1  
 Water Supply

### **4.3. Purchased Water from San Diego County Water Authority**

SDCWA is the regional wholesale water agency in San Diego County, serving 24-member agencies including the City. SDCWA purchases supplies from the Metropolitan Water District of Southern California (MWD), which receives its supplies primarily from the State Water Project (SWP) and the Colorado River. SDCWA also receives Colorado River water via transfers from Imperial Irrigation District (IID) and conservation savings from several canal-lining projects. Both SWP and Colorado River supplies have become increasingly vulnerable since the early 1990s due to droughts, water rights issues, and environmental restrictions. SDCWA thus also purchases desalinated seawater produced at the Claude “Bud” Lewis Carlsbad Desalination Plant and blends it into member agency supplies. SDCWA has diversified its supply sources to ensure water reliability to its member agencies, even in drought years.

The City purchases both treated (31%) and raw/ untreated (69%) water from SDCWA via five connections. Total capacity via connections is 68 million gallons/day (MGD) (76,169 AFY) for treated water and 108 MGD (120,975 AFY) for untreated water. The City’s Robert A. Weese Water Filtration Plant is used to treat raw water from SDCWA to potable standards.

Pursuant to its contract with SDCWA, the City could purchase up to 40 cubic feet per second (CFS) (approximately 28,960 AFY) of treated water from SDCWA in addition to current Robert A. Weese Water Filtration Plant capacity of 36 CFS (approximately 26,100 AFY) of untreated water. This results in a reliable supply source for the City well in excess of its purchased SDCWA supply (refer to **Table 4-1**).

#### **4.3.1. Metropolitan Water District of Southern California (MWD)**

SDCWA purchases the largest amount of water from MWD among its 26-member agencies. MWD obtains its water supply from the Colorado River via Colorado River Aqueduct and the State Water Project via the California Aqueduct. Under Section 135 of the Metropolitan Act, each member agency has a preferential right to a percentage of WMD’s available water supplies, and the preferential right is based on the total payment the member agency made toward capital and operating costs. Currently, SDCWA has a preferential right to 18.42% of MWD’s water supply.<sup>12</sup> Based on the MWD’s 2015 UWMP, MWD has sufficient supply to meet expected demands under both the single driest year and the multiple dry-year hydrologic conditions through 2040.

#### **4.3.2. Water Authority -- IID Water Conservation and Transfer Agreement**

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<sup>12</sup> Source: 2015 SCDWA UWMP  
Water Supply

The SDCWA signed a transfer agreement with IID in 1998 for the long-term transfer of conserved agricultural water to San Diego County. On October 10, 2003, the SDCWA and IID executed an amendment to the original 1998 Transfer Agreement and on the approval and implementation of the Quantification Settlement Agreement. Through the agreement, SDCWA received 100,000 AF in 2015, with the quantities to be increased annually up to 200,000 AF by 2021, at which time quantities would remain fixed for the duration of the transfer agreement.

### **4.3.3. All-American Canal and Coachella Canal Lining Projects**

Through the 2003 Quantification Settlement Agreement and related contracts, the SDCWA receives 77,700 AFY of conserved water from lining of the All-American and Coachella Canals for 110 years.

### **4.3.4. Desalinated Seawater**

SDCWA began purchasing and treating desalinated seawater from the Carlsbad Desalination Plant in October 2015. The plant can provide a highly reliable local supply of up to 56,000 AFY for the region. Of the 56,000 AFY of desalinated seawater production, 6,000 AFY is considered as a member agency local supply. This desalinated seawater is blended into SDCWA's treated water supply and delivered to its member agencies.

### **4.3.5. Carryover Supplies**

SDCWA has invested in carryover storage supplies to increase supply reliability in dry years and multiple dry years. The carryover storage supply program includes both in-region surface water storage and out-of-region groundwater storage in California's Central Valley. Up to 40,000 AFY of carryover storage supplies can be utilized in one year.

## **4.4. Groundwater Supplies**

### **4.4.1. Regulations**

#### **SB 610**

#### **California Water Code Section 10910**

*(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water assessment:*

- (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
- (2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water*

*system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*

- (3) *A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*
- (4) *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*
- (5) *An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

#### **4.4.2. Groundwater from the Mission Basin**

The City pumps groundwater from the Mission Basin which is a sub-basin of the San Luis Rey Valley Groundwater Basin. The San Luis Rey Valley Groundwater Basin has been designated as a medium priority basin under the California Statewide Groundwater Elevation Monitoring (CASGEM) program, meaning that the state considers it a priority basin for monitoring. The City in conjunction with the County of San Diego are monitoring entities for the basin.

No groundwater management plan is currently in place for the Mission Basin, but the City is exploring formation as the Groundwater Sustainability Agency (GSA) for the lower basin, along with re-designation of the Mission Basin as a formally-recognized basin separate from San Luis Rey Valley Groundwater Basin.

Brackish groundwater extracted from the basin contains high levels of TDS, contaminations of Trichloropropane (TCP), iron, and manganese, and is required to be desalinated prior to distribution and use. Groundwater is treated at the Mission Basin Groundwater Purification Facility (MBGPF) primarily via the method of reverse osmosis from eight wells owned and operated by the City. The MBGPF was put into service in 1992 with a capacity of 2.0 MGD, and has since been expanded to its current capacity of 6.4 MGD (7,130 AFY), in 2002.

Mission Basin is estimated to have a natural safe yield of 7,000 to 10,000 AFY. However, with the challenges in groundwater extraction, including mechanical limitations and well production, the determined current reliable average brackish groundwater supply from the Mission Basin that can be treated at the MBGPF is 3,300 AFY.

#### **4.4.3. Indirect Potable Reuse**

The City has initiated an indirect potable reuse project through groundwater recharge, which has completed the investigative phase. The indirect potable reuse project would have water treated at the SLRWRF recharged into the Mission Groundwater Basin to help replenish the local groundwater basin regardless of hydrologic conditions and allow more groundwater extraction to meet potable demands.

The indirect potable reuse project will utilize advanced treated recycled water to be supplied through the MBGPF. When indirect potable reuse is implemented, approximately 3,060 AFY of additional supply is estimated by 2020 and 8,360 AFY of additional supply is estimated by 2050. The actual capacity, size, and location of the future indirect potable reuse facilities are currently being developed by the City.

Previous studies conducted by the City concluded that the planned expansion of the MBGPF will result in no significant impacts to existing groundwater-dependent vegetation during extended dry-year periods lasting up to three years.

The IPR project will help maximize the use of existing groundwater pumping and treatment facilities and render MBGPF a reliable supply source of up to 7,130 AFY of potable water in the future.

## 4.5. Recycled Water

### 4.5.1. San Luis Rey Water Reclamation Facility

The City of Oceanside treats its collected wastewater at two wastewater treatment plants: SLRWRF and La Salina Wastewater Treatment Plant (LSWWTP). The SLRWRF has produced recycled water from the San Luis Rey plant since its construction in 1972. It currently treats up to 0.7 MGD or 784 AFY of wastewater to recycled water standards.

The City's existing recycled water system consists of 1.2 miles of recycled water pipeline that serves one customer, the Oceanside Municipal Golf Course. The golf course received 104 AFY tertiary recycled water in 2015. At present, the remaining tertiary recycled water not used at the golf course is discharged into Whelan Lake, a bird sanctuary. The average annual deliveries to Whelan Lake between 2011 and 2015 were 194 AF, approximately 60% of the City's total recycled water production.

The City has no plans to produce recycled water at the LSWWTP. The City plans to decommission this plant and replace it with a sewer lift station (Buccaneer Lift Station) to pump wastewater flows to the SLRWRF. When complete, these improvements will increase recycled water production at the SLRWRF.

The proposed Buccaneer Lift Station is anticipated to be operational in 2020. The City plans to expand tertiary treatment capacity at the SLRWRF to 1.5 MGD by 2017, and to 7.5 MGD by 2045. Secondary treatment capacity will also be increased from 13.5 MGD by 2020, and to 17.4 MGD by 2045.

The City plans substantial expansion of its recycled water system as well. Notably, the City is a member of the North San Diego Water Reuse Coalition. The City, together with nine other water and wastewater agencies in the North San Diego County, work to maximize recycled water use and improve recycled water efficiencies. The Coalition plans to add substantial additional recycled water to the County's water supply portfolio through increasing available recycled water resources, and constructing the recycled water pipeline and other infrastructure needed to provide recycled water to customers.

### 4.5.2. Non-Potable Recycled Water

Based on the Recycled Water Master Plan that was completed in 2015, potential recycled water customers are expected to increase. Recycled water customers include, for instance, golf courses, cemeteries, parks, and homeowner associations. Potential uses of recycled water include agricultural irrigation, landscape irrigation, wildlife habitat enhancement at Whelan Lake, and groundwater recharge with the primary use of landscape irrigation.

Two recycled water systems were proposed in the City's Recycled Water Master Plan: the Upper SLRWRF system and the Lower SLRWRF system. The Upper SLRWRF system includes service to Arrowood Golf Course, Gilligan Groves, Rocket Farms Herbs and other agriculture and irrigation customers. Approximately 1,110 AFY of recycled water is estimated



to be supplied over to these customers by 2025. To be conservative, this analysis assumed all water demands associated with the Project will use potable water supplies.

The Lower SLRWRF system includes services to the El Corazon site, El Camino Country Club Golf, Ocean Ranch Future Development, Ocean Hills area, and other landscape irrigation customers. Approximately 2,040 AFY of recycled water will be served to these customers over the next 20 years.

#### **4.6. Transfer Opportunities**

The City currently has nine emergency interconnections with four neighboring agencies that can be used for short-term exchanges during catastrophic events. These emergency interconnections also allow the City to participate in regional water supply exchanges and access an intricate outside network of water distribution systems during planned outages. Except for providing a small volume of water to Vista Irrigation District (VID) through the Fall/Olive Exchange, the City does not regularly sell or transfer water to other agencies.

#### **4.7. Desalinated Water Opportunities**

The City has plans to expand its local water supplies and diversify its water resources. Desalinated water, including desalinated groundwater and desalinated seawater, is an expected future water supply for the City after the City incorporates all other measures and this option becomes fiscally viable. In addition to the desalinated groundwater that is available to the City, the City is exploring an independent supply of desalinated seawater. The City completed a Seawater Desalination Pilot Facility and Feasibility Study in October 2010. The study identified a feasible, constructible and cost-effective project to add a seawater component to the MBGPF. Net Production of the seawater desalination plant is expected to be 5,040 AFY in the long-term planning period based on the 2015 WMP. The City did not include this potential seawater desalination supply in its supply projections in the 2015 UWMP. Similarly, at the time of preparing this report, there are less expensive options that the City is implementing first to increase the City's local supply as desalinated water is still not an economically feasible option. Therefore, the potential seawater desalination supply is also not considered in this assessment.

## Chapter 5. Potable Water Supply Reliability

As discussed in the previous chapter, the City plans to diversify its water supply resources and reduce its dependence on imported water by utilizing groundwater supplies, expanding recycled water programs, and investigating the feasibility of other supply sources such as seawater desalination.

The City's water supply reliability is discussed in this section. This discussion is based on reliability projections under different hydrologic conditions as presented in the City's 2015 UWMP.

### 5.1. SDCWA Reliability Policy

As a member agency of the SDCWA, the City is entitled to directly purchase water for its needs from the SDCWA on a wholesale basis. Therefore, it is important for the City to ensure that SDCWA can provide adequate amounts of imported water to the City to accommodate future needs.

To maximize the reliability of the regions' water supply, SDCWA is executing a long-term strategy to develop diverse and drought-resilient supplies; make major investments in the region's water delivery and storage system; and improve water use efficiency to offset the demands on imported water. SDCWA works with its member retail agencies in developing local supplies such as groundwater, recycled water, seawater desalination, and conservation.

The SDCWA's 2015 UWMP includes a supply reliability assessment using a conservative methodology, which only considered member agencies' "verifiable" supplies in addition to SDCWA's supply projections and supplemental supply from MWD. Based on SDCWA's supply reliability assessment, there would be adequate supplies for all planning years in a normal year. Shortages are expected to occur during a single dry-year by 2035, and more significant shortages will occur during a multiple dry year by 2028. The agency plans to mitigate these shortages through extraordinary water conservation measures and dry-year transfers if necessary. In addition, SDCWA assumed restricted supply from MWD during dry years in its reliability assessment. These shortages will be eliminated if MWD supplies approach the supply levels projected in its 2015 UWMP's supply capability for dry years.

## 5.2. City's Water Supply Reliability

### 5.2.1.1. Regulations

#### SB 610

##### **Water Code Section 10631 (Urban Water Management Plan requirements)**

(c) *Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:*

- (1) *An average water year.*
- (2) *A single dry water year.*
- (3) *Multiple dry water years.*

*For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.*

Note: Water Code section 10632 requires that the Urban Water Management Plan include a water shortage contingency analysis.

##### **Water Code Section 10632 (Urban Water Management Plan requirements)**

*The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier: (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage. (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply. (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning. (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. (f) Penalties or charges for excessive use, where applicable. (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive,*

on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. (h) A draft water shortage contingency resolution or ordinance. (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

### 5.2.1.2. City Supply Reliability

In 2015, the City adopted Ordinance No. 15-OR0276-1 to revise its existing water conservation program and add the implementation of drought response conservation measures in the event of mandatory water reductions.

In addition, as part of the City’s 2015 UWMP, a water supply reliability assessment was developed for long-term water supply reliability under normal year, single-dry year, and multiple dry year conditions. To be consistent with the SDCWA’s 2015 UWMP, the City used a 30-year average (1986 – 2015) as its normal year condition. The UWMP used 2015 conditions as single-dry year condition. Conditions from 2013 through 2015 were used as multiple-dry year conditions.

**Table 5-1** shows the demand and supply assumptions in normal year, single-dry year, and multiple-dry year conditions as a percentage of normal conditions.

**Table 5 -1: Demand and Supply Assumptions, as Percent of Normal<sup>13</sup>**

Source	Normal Water Year	Single Dry Water Year	Multiple-Dry Water Years		
			Year 1	Year 2	Year 3
<b>Demands</b>					
Potable Water	100%	107%	106%	111%	116%
Recycled Water	100%	107%	106%	111%	116%
(Non-Potable)					
Total Percent of Normal Demands		107%	106%	111%	116%
<b>Supplies</b>					
SDCWA Purchases	100%	109%	108%	Variable	Variable
				(114%-115%)	(110% - 121%)
Groundwater	100%	100%	100%	100%	100%

<sup>13</sup> Source: 2015 City of Oceanside UWMP, Table 7-3  
 Potable Water Supply Reliability

**Table 5 -1: Demand and Supply Assumptions, as Percent of Normal<sup>13</sup>**

Source	Normal Water Year	Single Dry Water Year	Multiple-Dry Water Years		
			Year 1	Year 2	Year 3
Advanced Treated Water	100%	100%	100%	100%	100%
Recycled Water	100%	107%	106%	111%	116%
Total Percent of Normal Potable Supplies		107%	106%	111%	Variable (108%-116%)
Total Percent of Overall Normal Supplies		107%	106%	111%	Variable (109%-116%)

### 5.2.2. Normal Year Supply and Demand Comparison

The City is projected to have sufficient water to meet its customers' needs through 2040 under normal year conditions, as shown in **Table 5-2**.

**Table 5-2: Normal Year Supply and Demand Comparison<sup>14</sup>**

Supply Type	2020	2025	2030	2035	2040
Supply Totals	31,728	32,915	32,813	33,190	33,537
Demand Totals	31,728	32,915	32,813	33,190	33,537
Difference	0	0	0	0	0

### 5.2.3. Single-Dry Year Supply and Demand Comparison

Demands are expected to increase by an average of 7% during single-dry year conditions. The City will supply its customers with additional purchase of water from SDCWA, groundwater, recycled water, and/or projected advanced treated water to meet these demands. The SDCWA's 2015 UWMP determined that no shortages are anticipated within the SDCWA's service area until 2035 during a single-dry year. SDCWA's projections assumed that MWD is limited to 1.4 million acre feet (MAF) of supplies due to dry conditions, and assumed increased reductions in deliveries from State Water Projects and /or reductions in Colorado

<sup>14</sup> Source: 2015 City of Oceanside UWMP, Table 7-4  
Potable Water Supply Reliability

River deliveries. Shortages would be accommodated if MWD supplies approach the supply levels projected in Metropolitan’s 2015 UWMP Single Dry Year Supply Capacity via utilization of the carryover supplies of up to 40,000 AFY, as discussed in Section 4.3.5.

Therefore, the City has sufficient water to meet its customers’ needs through 2040 under single-dry year conditions, as shown in **Table 5-3**.

**Table 5-3: Single Dry Year Supply and Demand Comparison<sup>15</sup>**

Supply Type	2020	2025	2030	2035	2040
Supply Totals	33,886	35,153	35,044	35,447	35,818
Demand Totals	33,886	35,153	35,044	35,447	35,818
Difference	0	0	0	0	0

#### 5.2.4. Multiple-Dry Year Supply and Demand Comparison

As shown in **Table 5-4**, water demands are projected to increase during a multiple dry year scenario by 6%, 11%, and 16% for years 1 through 3 respectively. During multiple-dry years, recycled water production is assumed to increase to meet additional recycled water demands, while advanced treated water and groundwater supplies would remain consistent with normal year projections. As in the case of a single-dry year, the City will purchase additional water from SDCWA for all years in which SDCWA projected 100% reliability. Based on the SDCWA’s 2015 UWMP, a potential supply deficit of 3% and 7% is projected in the third year of a multiple-dry year scenario in both 2035 and 2040.

To be consistent with the SDCWA’s 2015 UWMP, the City’s 2015 UWMP anticipates reductions in purchased water from SDCWA of 3% and 7% in these years, as shown in **Table 5-4**. With reduced supplies from SDCWA, the City projects a potential deficit in 2035 and 2040 during the third year of a multiple-dry years scenario. This deficit would be addressed through implementation of extraordinary conservation measures or through the conversion of additional customers to recycled water beyond that already projected. These measures would reduce water demands in order to ensure sufficient available water supply, as shown in **Table 5-5**.

**Table 5-4: Extraordinary Conservation in the Third Year of a Multiple Dry Year Scenario (AF)<sup>16</sup>**

<sup>15</sup> Source: 2015 City of Oceanside UWMP, Table 7-5

<sup>16</sup> Source: 2015 City of Oceanside UWMP, Table 7-6

Multiple-Dry Year: Year 3	2020	2025	2030	2035	2040
Potable Supply	36,403	36,272	34,759	33,891	32,392
Potable Demand	36,403	36,272	34,759	35,011	34,903
Potential Difference	0	0	0	1,120	2,511
Extraordinary Conservation or Conversion to Recycled Water	0	0	0	1,120	2,511
Total Potable Demand	36,403	36,272	34,759	33,891	32,392
Difference	0	0	0	0	0

**Table 5-5: Multiple Dry Year Supply and Demand Comparison<sup>17</sup>**

Multiple-Dry Year: Year 3		2020	2025	2030	2035	2040
First Year	Supply Totals	33,759	35,022	34,913	35,314	35,683
	Demand Totals	33,759	35,022	34,913	35,314	35,683
	Difference	0	0	0	0	0
Second Year	Supply Totals	35,282	36,601	36,488	36,907	37,293
	Demand Totals	35,282	36,601	36,488	36,907	37,293
	Difference	0	0	0	0	0
Third Year	Supply Totals	36,868	38,247	38,129	37,446	36,459
	Demand Totals	36,868	38,247	38,129	37,446	36,459
	Difference	0	0	0	0	0

<sup>17</sup> Source: 2015 City of Oceanside UWMP, Table 7-7  
Potable Water Supply Reliability

## Chapter 6. Determination of Water Supply Sufficiency

### 6.1. Regulations

#### **SB 221 Requirements**

##### **Government Code Section 66473.7**

- (a) (2) *“Sufficient water supply” means the total water supplies available during normal, single-dry, and multiple-dry years within a 20- year projection that will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses. In determining “sufficient water supply, all of the following factors shall be considered:*
- (A) *The availability of water supplies over a historical record of at least 20 years.*
  - (B) *The applicability of an urban water shortage contingency analysis prepared pursuant to Section 10632 of the Water Code that includes actions to be undertaken by the public water system in response to water supply shortages.*
  - (C) *The reduction in water supply allocated to a specific water use sector pursuant to a resolution or ordinance adopted, or a contract entered into, by the public water system, as long as that resolution, ordinance, or contract does not conflict with Section 354 of the Water Code.*
  - (D) *The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives such as CALFED and Colorado River tentative agreements, to the extent that these water supplies meet the criteria of subdivision (d).*

### 6.2. Determination of Water Supply Sufficiency

Since the City’s 2015 UWMP does not specify future developments accounted for in the water demand forecasts, rather, it takes into consideration the potential future development demands based on the population and employment growth and water savings. In this assessment, a list of proposed future developments expected in a 20-year planning horizon since 2015 was created and their expected water demands were estimated and compared to the demand increase projected in the 2015 UWMP. A list of proposed future developments and their estimated water demands are included in **Appendix A**. Water demands of the proposed future developments including the Project were estimated based on the recommended water unit factors from the 2015 WMP, which do not take into consideration of water savings due to

implementation of water conservation measures, and implementation of recycled water conversions. However, future developments are most likely developed following the plumbing codes and the City's water conservation measures. Estimated future development demands herein are assumed to be all potable water demand for conservative planning purpose.

Water demands estimated for these proposed future developments are approximately 5,370 AFY. The City's 2015 UWMP estimated approximately 7,715 AFY, 7,602 AFY, 6,300 AFY, 6,517 AFY, and 6,424 AFY of potable water demand increases by 2020, 2025, 2030, 2035, and 2040, respectively. Potable Demands are expected to decline after 2020 as more potable water users convert to recycled water users. Water demands estimated for these proposed future developments are within the projected potable demand increases of the 2015 UWMP.

The proposed Project demand accounts for approximately 5-6.5% of the potable demand increases, and 4.1-4.5% of the total water demand increase projected in the 2015 UWMP.

As discussed in the previous section, the City's 2015 UWMP projects 100% supply reliability under normal year and single-dry year conditions. Under multiple-dry-year conditions, the City's total water demand is estimated to exceed the total supply by approximately 3% and 7% for the third year of 2035 and 2040, respectively. These deficits would be addressed through implementation of extraordinary conservation measures and/or through the conversion of additional customers to recycled water.

In addition, the City has developed a Water Shortage Contingency Plan that identifies ways in which the City can reduce water consumption during catastrophic events and in drought years. As part of the Water Shortage Contingency Plan, the Drought Ordinance established four drought stages of actions that can be taken to reduce water demand up to 40% or more. Since the Project will be located within the City's service area, the Project would have to adhere to any extraordinary conservation measures imposed by the City. It is not expected that the City would have to change either its current supply strategy, or the implementation of its Water Shortage Contingency Plan in response to a drought, to meet the Project and existing/ planned water demand.

### **6.3. Conclusion**

As discussed above, the planning documents referenced herein indicate that there is sufficient supply over a 20-year planning horizon to meet the projected demand during normal year and single dry year, and through associated water conservation measures for multiple-dry years.



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## REFERENCES

- California Department of Water Resources (DWR). 2016. 2015 UWMP Guidebook for Urban Water Suppliers. March.
- City of Oceanside. 2015 Urban Water Management Plan. June 2016.
- City of Oceanside. 2015 Integrated Master Plan, Vol. 1. Water Master Plan. June 2015.
- City of Oceanside. 2016 Water Conservation Master Plan Update. June 2016.
- San Diego County Water Authority (SDCWA). 2015 Urban Water Management Plan – Member Agency Draft. April 2016.
- City of Oceanside. 2015 Recycled Water Master Plan. December 2015.



# APPENDIX

**Appendix A. Planned Developments in 20 Years and Water Demand Estimations**

No.	Development Name	Proposed Development						Water Demand Unit Factor*							Water Demand Calculation							
		Hotel (rm)	Single Family (unit)	Multi-Family (unit)	Commercial (building area sq. ft.)	Commercial (lot acre)	Other	Hotel (gpd/rm)	Single Family (gpd/unit)	Single Family (gpd/ac)	Multi-Family (gpd/unit)	Multi-Family (gpd/ac)	Commercial (gpd/building area sq. ft.)**	Commercial (gpd/acre)	Hotel (gpd)	Single Family (gpd)	Multi-Family (gpd)	Commercial 1 (gpd)	Commercial 2 (gpd)	Other (gpd)	Total (gpd)	
1	AIRPORT RD DEVELOPMENT	86						115	400	1,500	400	3,000	0.13	1,500	9,890	0	0	0	0	0	0	9,890
2	MISSION COVE HOUSING DEV			288				115	400	1,500	400	3,000	0.13	1,500	0	0	115,200	0	0	0	0	115,200
3	OCEANSIDE PAVILION/OCEAN KAMP	300		700	253,000	12.4	1.7-acre wave pool	115	400	1,500	400	3,000	0.13	1,500	34,500	0	280,000	32,890	18,600	14,400	0	361,790
4	OCEANPOINTE			158				115	400	1,500	400	3,000	0.13	1,500	0	0	63,200	0	0	0	0	63,200
5	RANCHO VISTA			218				115	400	1,500	400	3,000	0.13	1,500	0	0	87,200	0	0	0	0	87,200
6	THE VILLAS AT MISSION SLR			222				115	400	1,500	400	3,000	0.13	1,500	0	0	88,800	0	0	0	0	88,800
7	VILLA STORIA			420				115	400	1,500	400	3,000	0.13	1,500	0	0	168,000	0	0	0	0	168,000
8	PRESIDIO AT RDO			64				115	400	1,500	400	3,000	0.13	1,500	0	0	25,600	0	0	0	0	25,600
9	OCEANSIDE MESA		22					115	400	1,500	400	3,000	0.13	1,500	0	8,800	0	0	0	0	0	8,800
10	MISSION FLATS			137	4,000			115	400	1,500	400	3,000	0.13	1,500	0	0	54,800	520	0	0	0	55,320
11	OCEANSIDE EAST SHOPPING CENTER					3.7		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	5,580	0	0	5,580
12	RIO ROCKWELL		50	54				115	400	1,500	400	3,000	0.13	1,500	0	20,000	21,600	0	0	0	0	41,600
13	ONE 11 MIXED USE			15	1,620			115	400	1,500	400	3,000	0.13	1,500	0	0	6,000	211	0	0	0	6,211
14	BREEZE LUXURY TOWNHOME APTS			90				115	400	1,500	400	3,000	0.13	1,500	0	0	36,000	0	0	0	0	36,000
15	901 PIER VIEW WAY RD			12	2,000			115	400	1,500	400	3,000	0.13	1,500	0	0	4,800	260	0	0	0	5,060
16	SCRIPPS AMBULATORY FACILITY				85,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	11,050	0	0	0	11,050
17	LAS BRISAS RES DEV		10					115	400	1,500	400	3,000	0.13	1,500	0	4,000	0	0	0	0	0	4,000
18	VIRI ESTATES				64,305	2.0		115	400	1,500	400	3,000	0.13	1,500	0	0	0	8,360	3,015	0	0	8,360
19	HILLCREST VILLAS NORTH		6					115	400	1,500	400	3,000	0.13	1,500	0	2,400	0	0	0	0	0	2,400
20	HILLCREST VILLAS SOUTH		12					115	400	1,500	400	3,000	0.13	1,500	0	4,800	0	0	0	0	0	4,800

**Appendix A. Planned Developments in 20 Years and Water Demand Estimations**

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		Hotel (rm)	Single Family (unit)	Multi-Family (unit)	Commercial (building area sq. ft.)	Commercial (lot acre)	Other	Hotel (gpd/rm)	Single Family (gpd/unit)	Single Family (gpd/ac)	Multi-Family (gpd/unit)	Multi-Family (gpd/ac)	Commercial (gpd/building area sq. ft.)**	Commercial (gpd/acre)	Hotel (gpd)	Single Family (gpd)	Multi-Family (gpd)	Commercial 1 (gpd)	Commercial 2 (gpd)	Other (gpd)	Total (gpd)
21	EL CORAZON - SPORTS ARENA PARCEL 4 (SUDBERRY)				185,000	5.2		115	400	1,500	400	3,000	0.13	1,500	0	0	0	24,050	7,860	0	24,050
22	EL CORAZON - AQUATIC CENTER				14,300			115	400	1,500	400	3,000	0.13	1,500	0	0	0	1,859	0	0	1,859
23	EL CORAZON - VENTANA (PARK VILLAS) INCLUDED?			70				115	400	1,500	400	3,000	0.13	1,500	0	0	28,000	0	0	0	28,000
24	EL CORAZON - MIXED USE DEV PARCEL 3 (SUDBERRY)			268	5,000			115	400	1,500	400	3,000	0.13	1,500	0	0	107,200	650	0	0	107,850
25	EL CORAZON - HILTON HOME 2 SUITES (STIRLING)	137						115	400	1,500	400	3,000	0.13	1,500	15,755	0	0	0	0	0	15,755
26	EL CORAZON - COMMERCIAL PARCEL 1 (SUDBERRY)				150,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	19,500	0	0	19,500
27	EL CORAZON - COMMERCIAL PARCEL 2 (SUDBERRY)				278,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	36,140	0	0	36,140
28	SUNSETS MIXED USE DEV			76	1,736			115	400	1,500	400	3,000	0.13	1,500	0	0	30,400	226	0	0	30,626
29	ALTA OCEANSIDE MIXED USE DEV (REPLACES SEA CLIFF TERRACE RES DEV)			309	5,500			115	400	1,500	400	3,000	0.13	1,500	0	0	123,600	715	0	0	124,315
30	BELVEDERE MIXED USE DEV	124		90		1.5		115	400	1,500	400	3,000	0.13	1,500	14,260	0	36,000	0	2,250	0	52,510
31	MELROSE HEIGHTS RES DEV		301			1.5		115	400	1,500	400	3,000	0.13	1,500	0	120,400	0	0	2,250	0	122,650
32	4617 N. RIVER RD.			450				115	400	1,500	400	3,000	0.13	1,500	0	0	180,000	0	0	0	180,000
33	N. RIVER VILLAGE MIXED-USE PROJECT				13,684			115	400	1,500	400	3,000	0.13	1,500	0	0	0	1,779	0	0	1,779
34	SPRING CREEK SENIOR COMMUNITY			131				115	400	1,500	400	3,000	0.13	1,500	0	0	52,400	0	0	0	52,400
35	SUNDANCE NATURAL FOODS PROPERTY			19				115	400	1,500	400	3,000	0.13	1,500	0	0	7,600	0	0	0	7,600

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		Hotel (rm)	Single Family (unit)	Multi-Family (unit)	Commercial (building area sq. ft.)	Commercial (lot acre)	Other	Hotel (gpd/rm)	Single Family (gpd/unit)	Single Family (gpd/ac)	Multi-Family (gpd/unit)	Multi-Family (gpd/ac)	Commercial (gpd/building area sq. ft.)**	Commercial (gpd/acre)	Hotel (gpd)	Single Family (gpd)	Multi-Family (gpd)	Commercial 1 (gpd)	Commercial 2 (gpd)	Other (gpd)	Total (gpd)
36	PACIFIC RIDGE			317				115	400	1,500	400	3,000	0.13	1,500	0	0	126,800	0	0	0	126,800
37	OCEAN RANCH CORPORATE CENTRE					400.0		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	600,000	0	600,000
38	Ocean Ranch-WINDSTAR OCEAN RANCH				200,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	26,000	0	0	26,000
39	Ocean Ranch-Coca-Cola Expansion				193,800			115	400	1,500	400	3,000	0.13	1,500	0	0	0	25,194	0	0	25,194
40	Ocean Ranch-MagnaFlow Expansion				100,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	13,000	0	0	13,000
41	Ocean Ranch-FIRST PARK				237,276			115	400	1,500	400	3,000	0.13	1,500	0	0	0	30,846	0	0	30,846
42	ARROYO VERDE SHOPPING CENTER				27,200			115	400	1,500	400	3,000	0.13	1,500	0	0	0	3,536	0	0	3,536
43	Pacific Coast Business Park- FedEx				314,977			115	400	1,500	400	3,000	0.13	1,500	0	0	0	40,947	0	0	40,947
44	Pacific Coast-PACIFIC COAST COLLECTION				397,115			115	400	1,500	400	3,000	0.13	1,500	0	0	0	51,625	0	0	51,625
45	Pacific Coast-KAISER MEDICAL CENTER				80,284			115	400	1,500	400	3,000	0.13	1,500	0	0	0	10,437	0	0	10,437
46	PACIFIC COAST BUSINESS PARK					124.0		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	186,000	0	186,000
47	Pacific Coast-OLLI SALUMERIA				80,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	10,400	0	0	10,400
48	4096 AVENIDA DE LA PLATA				24,036			115	400	1,500	400	3,000	0.13	1,500	0	0	0	3,125	0	0	3,125
49	Rancho del Ore Technology Park- Cornwell Biotech *				80,900			115	400	1,500	400	3,000	0.13	1,500	0	0	0	10,517	0	0	10,517
50	DA VITA DIALYSIS MEDICAL BUILDING				10,655			115	400	1,500	400	3,000	0.13	1,500	0	0	0	1,385	0	0	1,385
51	VISTA PACIFIC			16				115	400	1,500	400	3,000	0.13	1,500	0	0	6,400	0	0	0	6,400
52	PACIFIC VIEW MEDICAL OFFICE				39,835			115	400	1,500	400	3,000	0.13	1,500	0	0	0	5,179	0	0	5,179
53	MEDICAL OFFICE BUILDING				26,000			115	400	1,500	400	3,000	0.13	1,500	0	0	0	3,380	0	0	3,380
54	TRI-CITY MEDICAL CENTER				57,476			115	400	1,500	400	3,000	0.13	1,500	0	0	0	7,472	0	0	7,472
55	MELROSE COMMERCIAL				12,009			115	400	1,500	400	3,000	0.13	1,500	0	0	0	1,561	0	0	1,561
56	PARK VILLAS AT EL CORAZON			80				115	400	1,500	400	3,000	0.13	1,500	0	0	32,000	0	0	0	32,000
57	HERITAGE HILLS MEMORY CARE FACILITY				32,616			115	400	1,500	400	3,000	0.13	1,500	0	0	0	4,240	0	0	4,240
58	CAMINO TOWN & COUNTRY SHOPPING CENTER				147,028			115	400	1,500	400	3,000	0.13	1,500	0	0	0	19,114	0	0	19,114
59	TEXAS ROADHOUSE				8,202			115	400	1,500	400	3,000	0.13	1,500	0	0	0	1,066	0	0	1,066
60	IVY RIDGE ESTATES			5				115	400	1,500	400	3,000	0.13	1,500	0	0	2,000	0	0	0	2,000
61	THE INNS AT BUENA VISTA CREEK	426			3,500			115	400	1,500	400	3,000	0.13	1,500	48,990	0	0	455	0	0	49,445
62	MORSE ST. TOWNHOMES			38				115	400	1,500	400	3,000	0.13	1,500	0	0	15,200	0	0	0	15,200
63	BELLA TERRA APARTMENTS			15				115	400	1,500	400	3,000	0.13	1,500	0	0	6,000	0	0	0	6,000
64	VINE ST. COLLECTION			58				115	400	1,500	400	3,000	0.13	1,500	0	0	23,200	0	0	0	23,200
65	FAIRFIELD INN & SUITES	105						115	400	1,500	400	3,000	0.13	1,500	12,075	0	0	0	0	0	12,075
66	MAXSON			22				115	400	1,500	400	3,000	0.13	1,500	0	0	8,800	0	0	0	8,800
67	STARBUCKS DRIVE-THRU				850			115	400	1,500	400	3,000	0.13	1,500	0	0	0	111	0	0	111
68	DT-HYATT PLACE	127		24				115	400	1,500	400	3,000	0.13	1,500	14,605	0	9,600	0	0	0	24,205
69	DT-IN-N-OUT BURGERS					0.9		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	1,350	0	1,350
70	DT-724 N. PACIFIC ST.			4				115	400	1,500	400	3,000	0.13	1,500	0	0	1,600	0	0	0	1,600
71	DT-WINDWARD WAY			3				115	400	1,500	400	3,000	0.13	1,500	0	0	1,200	0	0	0	1,200
72	DT-VILLA CAPRI			3				115	400	1,500	400	3,000	0.13	1,500	0	0	1,200	0	0	0	1,200
73	DT-308 N. TREMONT ST.			3				115	400	1,500	400	3,000	0.13	1,500	0	0	1,200	0	0	0	1,200
74	DT-FRASER & COVELL			4				115	400	1,500	400	3,000	0.13	1,500	0	0	1,600	0	0	0	1,600
75	DT-Beach Lofts			10	2,000			115	400	1,500	400	3,000	0.13	1,500	0	0	4,000	260	0	0	4,260
76	DT-1010 OCEANSIDE	124		90	8,357			115	400	1,500	400	3,000	0.13	1,500	14,260	0	36,000	1,086	0	0	51,346
77	DT-HAYEK			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
78	DT-North Beach Promenade			52	10,000			115	400	1,500	400	3,000	0.13	1,500	0	0	20,800	1,300	0	0	22,100
79	DT- GF Properties Lot 18			66	10,085			115	400	1,500	400	3,000	0.13	1,500	0	0	26,400	1,311	0	0	27,711
80	DT- GF Properties Lot 19			101	13,690			115	400	1,500	400	3,000	0.13	1,500	0	0	40,400	1,780	0	0	42,180
81	DT-JAPANESE CRAFT BREWERY					0.3		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	450	0	450
82	DT- GF Properties Lot 5			35	1,602			115	400	1,500	400	3,000	0.13	1,500	0	0	14,000	208	0	0	14,208
83	DT-GF Properties Lot 20			29	15,057			115	400	1,500	400	3,000	0.13	1,500	0	0	11,600	1,957	0	0	13,557
84	DT-Oceanside Marriot Springhill Suites	149			6,438			115	400	1,500	400	3,000	0.13	1,500	17,135	0	0	837	0	0	17,972
85	DT-SD Malkin Beach Resort Hotel North Block	135						115	400	1,500	400	3,000	0.13	1,500	15,525	0	0	0	0	0	15,525
86	DT-SD Malkin Beach Resort Hotel South Block	225						115	400	1,500	400	3,000	0.13	1,500	25,875	0	0	0	0	0	25,875
87	DT-218 S. THE STRAND			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
88	DT-217 S. PACIFIC ST.			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
89	DT-312 S. THE STRAND			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
90	DT-314 S. THE STRAND			8				115	400	1,500	400	3,000	0.13	1,500	0	0	3,200	0	0	0	3,200
91	DT-412 S. THE STRAND			4				115	400	1,500	400	3,000	0.13	1,500	0	0	1,600	0	0	0	1,600

**Appendix A. Planned Developments in 20 Years and Water Demand Estimations**

No.	Development Name	Proposed Development						Water Demand Unit Factor*						Water Demand Calculation							
		Hotel (rm)	Single Family (unit)	Multi-Family (unit)	Commercial (building area sq. ft.)	Commercial (lot acre)	Other	Hotel (gpd/rm)	Single Family (gpd/unit)	Single Family (gpd/ac)	Multi-Family (gpd/unit)	Multi-Family (gpd/ac)	Commercial (gpd/building area sq. ft.)**	Commercial (gpd/acre)	Hotel (gpd)	Single Family (gpd)	Multi-Family (gpd)	Commercial 1 (gpd)	Commercial 2 (gpd)	Other (gpd)	Total (gpd)
92	DT-416 S. MYERS - CHAPMAN CONDOS			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
93	DT-502 S. THE STRAND			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
94	DT-523 S. MYERS STREET			7				115	400	1,500	400	3,000	0.13	1,500	0	0	2,800	0	0	0	2,800
95	DT-602 S. MYERS STREET			2				115	400	1,500	400	3,000	0.13	1,500	0	0	800	0	0	0	800
96	CLEVELAND ST. TOWNHOMES			8				115	400	1,500	400	3,000	0.13	1,500	0	0	3,200	0	0	0	3,200
97	DT-700 THE STRAND			17				115	400	1,500	400	3,000	0.13	1,500	0	0	6,800	0	0	0	6,800
98	DT- Beach Restrooms Phase I					35.8		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	37,673	0	37,673
99	DT-Beach Restrooms Phase II					35.8		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	37,673	0	37,673
100	DT-Tin Fish Restaurant					0.1		115	400	1,500	400	3,000	0.13	1,500	0	0	0	0	25	0	25
101	Lawrence Canyon Mixed Use Dev			500				115	400	1,500	400	3,000	0.13	1,500	0	0	200,000	0	0	0	200,000
102	1021 Cleveland St			16				115	400	1,500	400	3,000	0.13	1,500	0	0	6,440	0	0	0	6,440
103	Emerald Ridge			48				115	400	1,500	400	3,000	0.13	1,500	0	0	19,200	0	0	0	19,200
104	North River Farms	100	559	130		6.4	agriculture, parks/open space	115	400	1,500	400	3,000	0.13	1,500	11,500	223,600	52,000	0	9,600	50,680	347,380
105	South Morro Hills	30	1,500					115	400	1,500	400	3,000	0.13	1,500	3,450	600,000	0	0	0	0	603,450
106	Surfrider & N. Freeman		5					115	400	1,500	400	3,000	0.13	1,500	0	2,000	0	0	0	0	2,000
<b>Total (gpd)</b>																					<b>4,795,528</b>
<b>Total (AFY)</b>																					<b>5,372</b>

\* Water demand unit factors are based on the 2015 Water Master Plan except for commercial (gpd/ building sq. ft.)

\*\* Based on similar studies from various agencies from Southern California