

SECTION 4

Basis of Cumulative Analysis

4.1 Introduction

The California Environmental Quality Act (CEQA) Guidelines Section 15355, *Cumulative Impacts*, provides the following definition of cumulative impacts:

“Cumulative impacts” refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.*
- (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

CEQA Guidelines Section 15130, *Discussion of Cumulative Impacts*, further addresses the discussion of cumulative impacts, as follows:

- (1) An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR;
- (2) If the combined cumulative impact associated with the project’s incremental effect and the effects of other projects is not significant, the EIR should briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR.
- (3) If the combined cumulative impact associated with the project’s incremental effect and the effects of other projects is significant, the EIR must determine whether the project’s contribution is cumulatively considerable.
- (4) The EIR may conclude the project’s contribution to a significant cumulative impact is less than cumulatively considerable and thus is not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The California Coastal Act (Public Resources Code Division 20) notes the following regarding cumulative effects (Sections 30105.5 and 30250(a), respectively):

Cumulatively; cumulative effect, "Cumulatively" or "cumulative effect" means the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located [...] where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

Section 5, *Environmental Analysis*, assesses the cumulative impacts for each applicable environmental issue, and does so to a degree that reflects each impact's severity and likelihood of occurrence.

Pursuant to CEQA Guidelines Section 15130(b), the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness, and should include the following elements:

1. *Either:*
 - A. *A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency, or*
 - B. *A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projects may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.*
2. *When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.*
3. *Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.*
4. *A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and*
5. *A reasonable analysis of the cumulative impacts of the relevant projects, including examination of reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.*

Both the list and summary of projections approaches are used in this EIR to determine the Project's cumulative impacts, depending upon which approach is appropriate/relevant for each environmental issue area. Additionally, the geographic area considered for the cumulative

analysis varies according to environmental issue area and was determined based upon the Project's scope and anticipated area in which the Project could contribute to an incremental increase in cumulatively considerable impacts (as discussed throughout Section 5).

Project construction-related effects are primarily associated with temporary construction activities in the immediate site vicinity, or along local arterials for construction traffic and staging areas. The local planned development projects in the City of El Segundo and surrounding communities are included in **Table 4-1** and are considered in this cumulative impacts analysis. Additionally, impacts of the Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS), a long-term planning and management plan for the regional transportation system (SCAG 2016a), which are evaluated in the 2016 RTP/SCS Program EIR (SCAG 2016b), are also considered. The 2016 RTP/SCS Program EIR provides a regional scale analysis of impacts of all development in the region through 2040. This regional scale analysis is used in this EIR, as appropriate, to help determine whether the proposed Project has the potential to result in a cumulatively considerable contribution to significant cumulative impacts (see discussion below). Construction-related effects (other than regional criteria pollutant emissions and haul routes) are generally localized, and the specific timing and characteristics (equipment mix) of individual projects varies and therefore detailed construction effects of cumulative development cannot be determined.

The Project's operational effects have the potential to have overlapping or cumulative impacts at a variety of geographies. For example, the Project's potential greenhouse gas impacts are global in nature, (see Section 5.7, *Greenhouse Gas Emissions*); the Project's potential air quality impacts are regional in nature (see Section 5.2, *Air Quality*); and the Project's potential noise impacts are highly localized in nature (see Section 5.12, *Noise*). For onshore local cumulative impacts, the list of cumulative projects in Table 4-1 and the following 2016 RTP/SCS discussion, are considered in this analysis. For marine cumulative impacts, the Desalination Facilities and Other Seawater Intakes in the Southern California Bight discussion are considered as projects within the cumulative scenario.

As noted above, CEQA allows the discussion of cumulative impacts to be based upon a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. The onshore cumulative project list (Table 4-1) and/or the 2016 RTP/SCS projected regional growth is used to determine whether the proposed Project has the potential to result in a cumulatively considerable contribution to significant cumulative impacts. Cumulative projects potentially affecting marine resources are discussed separately below.

4.2 Local Onshore Cumulative Project List

Related past, present and probable future onshore projects and other possible development in the Project area determined as having the potential to interact with the proposed Project to the extent that a significant cumulative effect may occur are identified in Table 4-1. The list of projects was developed based on data provided by the West Basin Municipal Water District (West Basin) and known developments in the cities/communities located in the Project area as of 2016. The

implementation of each project identified in Table 4-1 was determined to be reasonably foreseeable over the horizon of the Project development (through 2029). As discussed in detail in Section 3.5, *Local Project Construction*, construction and commissioning of the 20 MGD Local Project would require up to 72 months (depending on the selected site) and is assumed to commence in 2021, with completion estimated by 2027 (depending on the selected site). The Regional Project would begin in 2026 and extend 36 months through 2029.

**TABLE 4-1
CUMULATIVE PROJECTS LIST**

No.	Cumulative Project Name/Address	Cumulative Project Description
City of El Segundo		
1	Data Center (445 North Douglas Street)	Approved 332,137 square-foot (SF) Data Center Approved on October 23, 2008 Status: Under construction, 158,624 SF complete, remaining phases will not be constructed
2	Hotel (199 Continental Boulevard)	152-room hotel (71,000 SF) Status: Under construction, projected completion in Summer 2017
3	Senior Housing (540 East Imperial Avenue)	304-unit Senior Housing/Assisted Living Facility or 58 Single and Multi-Family Dwelling Units (DU) Status: Application approved, projected completion in Fall 2017
4	Office, Retail, Warehouse, Light Industrial Development (2100 East El Segundo Boulevard)	2,089,090 SF of existing 2,142,457 SF proposed 4,231,547 total SF Status: Application approved, plan check in progress, full build-out projected by end of 2022
5	R&D and office and Parking structure (455 Continental Boulevard and 1955 E Grand Ave)	Add 300,000 SF R&D & office 810-space parking structure 355,000 total SF Status: Application Submitted, Anticipated Completion: Full buildout projected by 2025
6	Hotel (888 North Sepulveda Boulevard)	Five-story, 190-room hotel (111,350 SF) Status: Application Approved and grading permit issued, Under Construction Fall 2016
7	New High School (201 North Douglas Street)	Demolish between 90,000 to 170,000 SF of existing building Construct new 180,000 to 240,000 SF high school Status: Approved by Wiseburn School District, Anticipated Completion: Main Building late 2017, Gym Fall 2018
8	Office (400 Duley Road)	67,000 SF office Status: Under Construction, Anticipated Completion Early 2017
9	Addition to existing Hotel (525 North Sepulveda Boulevard)	Add 6,952 SF to existing 98,548 SF hotel New total of 105,500 SF Status: Approved, in Plan Check, Anticipated Completion South Tower March 2017 Remainder July 2017
10	Industrial Building (750 South Douglas)	Add 4,986 SF to an existing 15,075 SF Industrial Building New total of 20,061 SF

No.	Cumulative Project Name/Address	Cumulative Project Description
		Status: Application Submitted and Under Review, Anticipated Completion Late 2018
11	Corporate Office and Athletic Training Facility (2275 Mariposa Avenue)	New 52,000 SF corporate office building 68,380 SF athletic training facility Status: Under Construction, Anticipated Completion Early 2017
12	Office Building (500 South Douglas Street and 2330 Utah Avenue)	Demolition of 51,936 gross SF industrial Construction of 199,314 gross SF commercial office Status: Approved, in Plan Check, Anticipated Completion Mid 2017
13	Commercial/Office Condo (123 Nevada Street)	New four-unit commercial/office condo (14,998 SF) Status: Approved, in Plan Check, Anticipated Completion Early 2017
14	Office/Private Hotel Building (2125 Campus Drive)	121,450 SF hotel 63,550 SF office Status: Application Submitted and Under Review, Anticipated Completion Late 2017
15	Addition to existing Office Building (1700 East Imperial Avenue)	86,521 SF addition to existing Boeing S-50 office building Status: Application Submitted and Under Review, Anticipated Completion Late 2017
16	Residential (535 Indiana Street)	Four-unit residential building (7,200 SF) Status: Approved, in Plan Check, Anticipated Completion Late 2017
17	Industrial Buildings (123 Lomita)	One building 3-unit office/R&D condo Status: Under Construction, Completion Anticipated by Mid-2017
18	Hotel and Office (2130 East Maple Drive)	Office/Warehouse/ Research and Development (20,955 SF) Status: In plan check, Anticipated Completion Mid-2017
19	140 Sheldon Street	Two four-unit office buildings (7,692 SF) Status: In plan check, Anticipated Completion Mid-2017
20	The Lakes Specific Plan Project (400 South Sepulveda Boulevard)	Demolish existing driving range and pro shop Construct 65,000 SF TopGolf facility, including: 3-story hitting-bay and accessory-use structure (restaurant, bar, meeting and event space) Status: Application Submitted and Under Review, Anticipated Completion Fall 2018
21	3 Restaurants and 1 Bank (2171-2191 Rosecrans)	Demolish existing restaurant to create 3 restaurants and 1 bank Status: In plan check, projected completion by mid-2017
City of Redondo Beach		
22	Waterfront Development Project (Portofino Way and Torrance Circle)	Demolition of approximately 207,402 SF of existing structures Retention of 12,479 SF of existing development Construction of up to 511,460 SF of retail, restaurant, creative office, specialty cinema, a public market hall, and a boutique hotel Total of new and remaining development on-site would be 523,939 SF (304,058 SF of net new development) Status: Application being processed, NOP circulated June-July 2014, construction anticipated 2017-2020

No.	Cumulative Project Name/Address	Cumulative Project Description
23	South Bay Galleria Improvement Project (1815 Hawthorne Boulevard)	Increase existing SF by 217,864 SF, including department stores, mall shops, dining and entertainment. Overall density of development on the site (including retail, office, hotel, and housing) will increase to a maximum 1,943,965 sf of building floor area. Project will also include a hotel of up to 150 rooms and up to 650 DU (townhomes, condos, and/or apartment homes). Status: NOP posted October 2015, construction anticipated 2017-2018
24	Mixed-Use Development (1700 South Pacific Coast Highway)	149 DU 2637,000 SF of commercial Status: Approved June 2016, construction to be completed 2017
25	600 North Pacific Coast Highway	Expansion of existing automobile sales office/lot with adjacent property at 610 N. Pacific Coast Highway Status: Initial project development stage
City of Manhattan Beach		
26	213 Manhattan Beach Boulevard	3,371 SF retail 3,073 SF office Status: Completed third quarter of 2015
27	1133 Artesia Boulevard	12,000 SF grocery store Status: Approved 2014 and expired
28	865 Manhattan Beach Boulevard	15,000 SF office Status: Building permit issued October 2015
29	400 South Sepulveda Boulevard	40,000 SF medical office <i>Less General Office (40,000 SF)</i> Status: Completed first quarter of 2016
30	Skechers Design Center and Executive Offices – Site 2 (1050 Duncan Avenue, and 305, 309, and 317 South Sepulveda Boulevard)	37,173 SF office 199 parking spaces Less existing buildings (15,237 SF) Status: Scoping meeting for EIR held June 2016; construction would occur immediately following entitlement
31	Skechers Design Center and Executive Offices – Site 3 (330 South Sepulveda Boulevard)	75,203 SF office 270 parking spaces (subterranean) Status: Scoping meeting for EIR held June 2016; construction would occur immediately following entitlement
32	1800 Manhattan Beach Boulevard	3,000 SF office Status: Site structures demolished, project on hold
33	2205 Sepulveda Boulevard	Demolition of 1,040 SF commercial-retail Construction of 4,700 SF commercial-office Status: Building permit application submitted 2 nd quarter of 2015
34	1762 Manhattan Beach Boulevard	Convert single-family residential to 1,800 SF commercial-medical office and one apartment unit
35	757-761 Manhattan Beach Boulevard	Redevelopment of 4-duplex site (8 DU) with five condo DU with 2-car garages 10,102 SF

No.	Cumulative Project Name/Address	Cumulative Project Description
		Status: Approved December 2014, building permit issued 4 th quarter 2015
36	707 N. Sepulveda Boulevard	Conversion from automotive uses to: 27,500 SF supermarket 52-seat restaurant 7,000 SF commercial- bank Status: Use permit under review
37	3200 Sepulveda Boulevard	110,000 SF commercial- retail, in 2 Phases Status: use permit approved December 2014
38	1101 Aviation Boulevard	5,000 commercial- medical office Status: Building permit issued 3 rd quarter of 2015
39	1129 N. Sepulveda Boulevard	Demolition of existing gas station 4,000 SF commercial- bank 2,000 SF commercial- retail Status: Anticipated demolition date unknown
40	1100 Manhattan Beach Boulevard	Demolition of existing gas station 13,000 SF commercial- retail
City of Hermosa Beach		
41	11 and 19 Pier Avenue; 1250 and 1272 The Strand, and 20, 30, and 32 13 th Street	100 hotel rooms 22,461 SF retail, restaurant and public uses 155,030 SF gross floor area 178 parking spaces (subterranean) Status: Construction to commence late 2018
42	1429 Hermosa Avenue	30 hotel rooms 30,250 SF gross floor area 37 parking spaces Status: Under construction
43	Sketchers Design Center and Executive Offices – Site 1 (2851, 2901, 3001 and 3125 Pacific Coast Highway)	100,296 SF design center 20,207 SF offices 609 parking paces Status: Scoping meeting for EIR held June 2016; construction would occur immediately following entitlement
City of Lawndale		
44	Waxman's Gym (15701 Condon Avenue)	3,960 SF gym in existing commercial complex Status: Approved September 2015, project pending
45	16601 Hawthorne Boulevard	3,020 SF commercial- medical Status: Approved September 2015, project pending
46	4470 Rosecrans Avenue	7,050 SF auto use in existing structures Status: Approved September 2015, project pending
City of Hawthorne		
47	13403 Kornblum	12 condominium DU Status: Under construction, unknown completion date
48	14135 Cerise (formerly 14134 Yukon Avenue)	Construction of 127 DU (affordable housing) Status: Under construction, unknown completion date
49	14105-14137 Chadron Avenue	Construction of 109 DU (24 DU for moderate income housing)

No.	Cumulative Project Name/Address	Cumulative Project Description
		Status: Under construction, unknown completion date
50	14004 Doty Avenue	Construction of 22 DU (6 DU for moderate income housing) Status: Building permits obtained, completion date unknown
51	3670 West Imperial Highway	72 condominium DU Status: Under construction, unknown completion date
52	14501 Hindry Avenue	Costco Gas Station Expansion 22 fueling stations Status: Under construction, unknown completion date
53	12530 Prairie Avenue	Costco Gas Station 6 fueling stations 4,510 SF overhead canopy Status: Permits obtained, anticipated construction date unknown
54	11416 Inglewood Avenue	13 condominium DU Status: Under construction, unknown completion date
55	3670 Imperial Highway	13,938 SF commercial 48 condominium DU Status: Under construction, unknown completion date
56	12000 Hawthorne Boulevard	Mixed-Use, residential, commercial and office space Status: Formal application pending
57	Bounded by 116 th Street to the north, 118 th Street to the south, Grevillea Ave to the east, and Ramona Ave to the west	128 single-family homes- former RFK Hospital Status: In process of recording final map, construction not yet started and completion date unknown
58	Along Hawthorne Boulevard, from 105 Freeway to Rosecrans Avenue and adjacent commercial and residential neighborhoods	Downtown Hawthorne Specific Plan- aimed at revitalization of City's historic downtown corridor Status: Buildout date of Specific Plan 2035
59	14412 Yukon Avenue	11 DU Status: Anticipated construction date unknown
60	3857 West 139 th Street	12 DU Status: Under construction, anticipated completion date unknown
61	12918 Cerise Avenue	18,995 brewery, tasting room, outdoor patio Status: Under construction, anticipated completion November 2016
62	5151 El Segundo Boulevard	136-room hotel Status: Anticipated completion date unknown
63	East side of Crenshaw Boulevard Northrop Avenue to the north, El Segundo Boulevard to the south, and Dominguez Channel to the east	305 multi-family DU 11,020 SF of commercial Status: EIR preparation underway
64	2815 West El Segundo Boulevard	Amazon Distribution Center 171,215 SF warehouse 28,215 SF office space Status: Building permits obtained July 2016, anticipated construction date unknown
65	11998 Hawthorne Boulevard	Eco Village Specific Plan 50 DU

No.	Cumulative Project Name/Address	Cumulative Project Description
		36,330 SF residential parking 8,500 SF commercial use 27,000 commercial parking Status: Application pending, anticipated completion date unknown
66	3659 Rosecrans Avenue	100 DU Status: Application pending, anticipated completion date unknown
City of Torrance		
67	Northeast corner of Prairie Avenue and 176 th Street	62-unit senior condominium complex 3,000 SF commercial Status: Entitlement review, anticipated completion August 2018
68	Starbucks with drive-thru (18308 Hawthorne)	1,821 SF commercial Drive thru Status: Building permit plan check
City of Inglewood		
69	Hollywood Park (1050 South Prairie Avenue)	80,000 seat sport stadium 6,000 seat performance venue 2,500 DU 890,000 SF commercial retail 780,000 SF commercial office 120,000 SF casino 300-room hotel 25-acre open space 4-acre civic center Status: Under construction
City of Los Angeles		
70	Los Angeles International Airport	Relocation of runway Construction of centerline taxiway Improvements to north airfield taxiway Terminal improvements/extensions Development of intermodal Transportation Facility Consolidated Rent-a-Car facility Parking outside of Central Terminal Area Automated People Mover to link with Metro facilities Status: FEIR approved January 2013
71	Los Angeles International Airport – Northside Plan Update	Redevelopment of undeveloped land and existing golf course 470,000 SF mixed use (retail, restaurant, hotel, office) 215,000 SF community/civic use 1,025,000 SF office/research and development use 10,000 recreation support/open space 600,000 SF airport support Status: Final EIR errata released March 2015; Currently seeking approval from local/federal agencies
County of Los Angeles		
72	11814, 11816, 11824 Aviation Boulevard	128 room hotel 73,730 SF 50 parking spots

No.	Cumulative Project Name/Address	Cumulative Project Description
		Status: Application submitted April 11, 2016 and being processed
73	11810 Aviation Boulevard	2,967 SF office Status: Application submitted December 2011, approved August 2012

NOTES:

AC = acres; cfs = cubic feet per second; SF = square feet; AF = acre-feet.

SOURCE: RK Engineering Group, Inc. 2016.

4.3 2016 RTP/SCS Buildout

CEQA allows the discussion of cumulative impacts to be based upon a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. SCAG includes the six-County area comprised of Orange, Ventura, San Bernardino, Los Angeles, Riverside, and Imperial Counties. SCAG develops and regularly updates regional growth forecasts that incorporate relevant zoning and land use information from jurisdictional general plans. In April 2016 SCAG adopted the 2016-2040 RTP/SCS and certified the associated Program EIR, which acts as a long-term planning and management plan for the regional transportation system as well as providing strategies for regional sustainable growth consistent with state policies to reduce greenhouse gas emissions. The 2016 RTP/SCS Program EIR provides a regional scale analysis of impacts associated with development and transportation infrastructure improvements anticipated to occur under the 2016 RTP/SCS. This regional scale analysis evaluates all impacts anticipated to result from the broad and comprehensive projection of development within the region.

According to the 2016 RTP/SCS Program EIR, the population of Los Angeles County increased from 9,519,338 in 2000 to 10,041,797 in 2014, which was a 5.5 percent increase with an annual growth rate of 0.4 percent (SCAG 2016b). By 2040 when the proposed Project is anticipated to be built, the population for Los Angeles County is projected to increase to 11,514,000 in 2040, or an approximate 8.7 percent increase.

The 2016 RTP/SCS Program EIR identifies significant unavoidable impacts in a number of issue areas, and concludes that when population and employment growth is held constant, the following environmental impacts will be significant and unavoidable (SCAG 2016b).

West Basin adopted their most recent Urban Water Management Plan (UWMP) in 2015. Water demand projections presented in the 2015 URMP for the West Basin service area were calculated using the Metropolitan Demand Forecasting Model. This model uses population projections reported in the 2012 RTP/SCS with an average annual population increase of 0.4% between 2020-2040 (MWD 2016a). The relatively slow growth is based on the fact that well established cities are expected to be fully built out in the near future.

The proposed Project would develop a local water source as outlined in the 2015 UWMP, however, rather than provide additional capacity, the desalinated potable water would replace imported water use in West Basin's service area in the future. The volume generated would account for approximately 11 percent of the total water demands, while the rest of the demand

would be met by the use of imported water, recycled water, and water conservation. An approximately 20 percent of the water use would be from groundwater produced by certain retailers and cities that have groundwater rights. Given that the water demand projections were developed based on the 2012 RTP/SCS projection to meet the planned population growth, it is consistent with SCAG policies and planning and hence it is not growth inducing.

4.4 Desalination Facilities and Other Seawater Intakes in the Southern California Bight

As coastal-dependent land uses increase in intensity along the California shoreline, several desalination facilities have been proposed within the Southern California Bight.¹ These facilities, along with other ocean intake/discharge facilities, could potentially contribute to the Project's cumulative impacts. Existing and proposed facilities are outlined in **Table 4-2** and illustrated on **Figure 4-1**. This list focuses on ocean desalination and other seawater intake facilities.

TABLE 4-2
CUMULATIVE OCEAN INTAKE/DISCHARGE PROJECTS LIST

No.	Project/Facility	Location	Ultimate Yield/Capacity (MGD)	Intake	Discharge	Status ¹
1	San Diego County Water Authority/Poseidon Resources Carlsbad Seawater Desalination Project	Carlsbad	50	Screened Ocean Intake	Surface	Existing, In Regulatory Permitting Review
2	Los Angeles Department of Sanitation Hyperion Water Reclamation Plant	Los Angeles County	230	N/A	Wastewater Discharge	Existing, Active
3	Sanitation Districts of Los Angeles County Joint Water Pollution Control Plant	Los Angeles County	400	N/A	Wastewater Discharge	Existing, Active
4	AES Redondo Beach Generating Station	Redondo Beach	up to 881	N/A	Wastewater Discharge	Existing, Active
5	Chevron USA at Gaviota	Gaviota	0.4	Unknown	Comingled with Wastewater	Existing, Active
6	City of Santa Barbara Charles E. Meyer Desalination Facility	Santa Barbara	2.8-2.9	Screened Ocean Intake	Comingled with Wastewater	Existing, Active
7	U.S. Navy San Nicolas Island Desalination Facility	San Nicolas Island	0.02	Subsurface	Subsurface	Existing, Active
8	Southern California Edison Pebbly Beach Desalination Plant	Santa Catalina Island	0.2	Subsurface	Comingled with Cooling Water Discharge	Existing, Inactive but recently re-permitted

¹ The Southern California Bight includes the stretch of coastline between Point Conception and San Diego.

No.	Project/Facility	Location	Ultimate Yield/Capacity (MGD)	Intake	Discharge	Status ¹
9	Poseidon Resources - Huntington Beach Seawater Desalination Project	Huntington Beach	50	Screened Ocean Intake	Surface	In Regulatory Permitting Review
10	South Coast Water District - Doheny Ocean Desalination Project	Dana Point	15	Sub-Surface Slant Wells	Comingled with Wastewater	In CEQA Review
11	San Diego County Water Authority -Camp Pendleton Seawater Desalination Project	Camp Pendleton	100-150	Undetermined	Surface	In Feasibility Study
12	City of Oceanside - Seawater Desalination Project	Oceanside	5 to 10	Subsurface	Undetermined	In Feasibility Study

NOTES:

¹ Project statuses are subject to change depending on the relevant project approval, permitting, and construction process.

SOURCE: MWD 2016b, Table A.5-3; SWRCB 2015, Table 2-1 and Table 2-3.

4.4.1 Existing Facilities

There are four operational desalination facilities located within the Southern California Bight: San Diego County Water Authority/Poseidon Resources Carlsbad Seawater Desalination Project; Chevron USA at Gaviota Desalination Plant; Southern California Edison Santa Catalina Island Pebbly Beach Desalination Plant, and U.S. Navy San Nicolas Desalination Facility. Also, the Charles E. Meyer Desalination Facility located in Santa Barbara, California was reactivated in May 2017 (City of Santa Barbara 2018). There are currently several major desalination projects proposed within the Southern California Bight; refer to Table 4-2. There are also several existing ocean water intake/discharge facilities present along the coastline and operated for uses other than seawater desalination.² The discussion below describes some of the relevant existing seawater desalination facilities and ocean water intake/discharge facilities located near the proposed Project. It is noted that ocean water intake/discharge facilities are limited to those in close proximity to the ESGS and that the Southern California Bight supports many more additional facilities.

San Diego County Water Authority/Poseidon Resources Carlsbad Seawater Desalination Project

In development since 1998, the Claude “Bud” Lewis Carlsbad Desalination Plant (Carlsbad Desalination Plant) was dedicated on December 14, 2015 and produces 50 MGD for the San Diego County Water Authority (Water Authority). Situated in the City of Carlsbad next to NRG’s Encina Power Station at the Agua Hedionda Lagoon, the plant intakes seawater using the Encina Power Station’s existing once through cooling water discharge system, and produces desalinated

² The operational activities of many existing seawater intakes have been altered due to the State Water Resources Control Board (SWRCB) once-through-cooling policy issued in 2010. The SWRCB implements the Federal Clean Water Act §316(b) regulations on cooling water intake structures and establishes technology-based standards to reduce the harmful marine and estuarine effects associated with cooling water intake structures. In order to comply with this policy, several coastal power plants have retired the use of once-through cooling practices and therefore are not included in this cumulative analysis.

product water through reverse osmosis (RO). Brine concentrate produced at the Carlsbad Desalination Plant is discharged through an existing discharge channel that is situated parallel to the intake structure, with the outfall terminus located approximately 850 feet from the intake opening to avoid intermixing of the concentrate discharge and intake source water. The Carlsbad Desalination Plant is privately run by Poseidon Water, which sells 100 percent of the water to the Water Authority. The Carlsbad Desalination Plant is the largest desalination facility in both the Southern California Bight and the western hemisphere.

Los Angeles Department of Sanitation Hyperion Water Reclamation Plant

The City of Los Angeles Department of Sanitation (LA Sanitation) owns and operates the Hyperion Water Reclamation Plant (Hyperion), which is located at 12000 Vista Del Mar in the City of Playa Del Rey. Hyperion has operated since 1894, and has been subject to several expansion and improvement measures to improve and modernize the facility's overall design and capacity over the past 100 years. Today, Hyperion treats an average of 275 MGD of wastewater, and has a design capacity of 450 MGD and peak wet weather flow of 800 MGD to accommodate heavy rain events. Hyperion currently discharges an average of 225 MGD of treated wastewater through its offshore outfall.

Sanitation Districts of Los Angeles County Joint Water Pollution Control Plant

The Sanitation Districts of Los Angeles County (Sanitation Districts) own and operate the Joint Water Pollution Control Plant (JWPCP), which is located at 24501 South Figueroa Street in the City of Carson. The JWPCP treats approximately 280 MGD of wastewater to primary and secondary standards, and receives treated wastewater from several other Sanitation Districts' owned water reclamation plants through a series of trunk sewers. The JWPCP has a total permitted treatment capacity of 400 MGD (Sanitation Districts 2016). In 2015, the JWPCP had an effluent flow of 259 MGD (Sanitation Districts 2016). Treated wastewater produced at the JWPCP flows through a 1.5 mile long outfall extending off the Palos Verdes Peninsula into the Pacific Ocean at a depth of 200 feet.

AES Redondo Beach Generating Station

The AES Corporation (AES) Redondo Beach Generating Station (RBGS) is located at 1100 North Harbor Drive, Redondo Beach, California. The RBGS currently operates two existing nearshore intake structures and pipelines. The first is a 3-meter inside diameter intake located in the Redondo Beach Marina and terminates approximately 1,600 feet offshore (Units 5 and 6). Units 5 and 6 discharge 215 MGD of once-through cooling water, 5 MGD of groundwater seepage from basement areas of the RBGS, and 4 MGD of low volume wastes. The second is a 4.25-meter inside diameter intake located just south in King Harbor and terminates approximately 2,000 feet offshore (Units 7 and 8). Units 7 and 8 discharge 674 MGD of once-through cooling water, with small quantities of condensate overboard overflow, fuel oil tank farm rainfall run-off, and yard drains (LARWQCB 2000).

Additionally, the RBGS operates two existing nearshore discharge structures which run parallel to the facility's intake structures and pipelines. The first discharge is comprised of two conduits, each extending to the north of King Harbor to terminate approximately 1,600 feet offshore (Units 5 and 6). The second discharge structure is comprised of one conduit which extends to the south of King Harbor to terminate approximately 300 feet offshore in the Santa Monica Bay (Units 7 and 8; LARWQCB 2000).

In compliance with the Statewide Water Quality Control Policy on Coastal and Estuarine Waters for Power Plant Cooling (Once-Through Cooling Policy), the RBGS will retire once-through cooling by December 31, 2020.

Chevron USA at Gaviota

The Chevron USA, Inc. Desalination Plant has operated in Santa Barbara County since the late 1990s. The plant has a production capacity of 0.4 MGD. The plant combines brine with treated oil and gas plant wastewater to discharge through a 5,200-foot outfall/diffuser system which terminates into the Santa Barbara Channel. In total, the plant discharges approximately 0.001 MGD of sewage, 0.14 MGD brine, 0.36 MGD of excess seawater, and 0.0072 MGD of boiler blowdown (CCRWQCB 2004).

City of Santa Barbara Charles E. Meyer Desalination Facility

During the late 1980's, the City of Santa Barbara constructed a seawater desalination facility as an emergency water supply, with the production capacity of 7,500 AFY (or, approximately 6.7 MGD) and the potential for expansion up to 10,000 AFY (or, approximately 9 MGD). Due to the abundant rainfall in 1991-1992, the desalination plant was placed into standby mode. In 1991, the City of Santa Barbara voters elected to make desalination a permanent part of the City's water supply portfolio and with the approval of the Long Term Water Supply Program; in July 1994, the facility was added to the City's permanent sources of water. Due to sufficient freshwater supplies since 1991, the facility remained in long-term standby mode until July 2015. At that time, and in response to exceptional drought conditions, the Santa Barbara City Council voted unanimously to reactivate the Charles E. Meyer Desalination Facility. As of May 2017, the facility was reactivated and the City of Santa Barbara started distributing desalinated throughout their system (City of Santa Barbara 2018). The facility is anticipated to begin supplying water at a capacity of 3,125 AFY (or, approximately 2.8 MGD). The updated facility will use 40% less energy than the original design, and will use screened ocean intake pipes equipped with wedge-wire screens (City of Santa Barbara 2018).

U.S. Navy San Nicolas Island Desalination Facility

The U.S. Navy-owned San Nicolas Island Desalination Facility has provided all potable water supplies for San Nicolas Island since 1990. The San Nicolas Island Desalination Facility withdraws source water from a series of wells located on the island's northern beach and discharges brine at the same beach. In a partnership between the Naval Facilities Engineering and Expeditionary Warfare Center and the U.S. Army Tank Automotive Research Development and Engineering Center, the San Nicolas Desalination Facility was expanded and upgraded in 2015 with a new seawater desalination system capable of providing more than 0.021 MGD of drinking

water in order to meet the base's daily water demand of 0.015 MGD (Navy 2016). Updates to the plant also allow for one treatment train to run concurrently with a plant on standby. The San Nicolas Island Desalination Facility has expansion capacity for up to 0.04 MGD.

Southern California Edison Santa Catalina Island Pebbly Beach Desalination Plant

Southern California Edison's (SCE) Pebbly Beach Desalination Plant has served Catalina Island with up to 0.2 MGD since 1991. In 2015, SCE announced its partnership with the City of Catalina to buy another desalination unit for the City in order to combat drought impacts. The new unit, which became operational in 2016, is capable of producing an additional 0.125 MGD and is connected to the existing plant. Source water for the SCE Desalination Plants is withdrawn via wells to the original desalination plant, located at the Pebbly Beach Generating Station in Avalon. The SCE Pebbly Beach Desalination Facility uses RO technology to treat seawater to potable standards. Brine, filter backwash, untreated seawater, and wastewater from flushing the seawater supply pipeline to control biofilm growth is discharged via ocean outfall (LARWQCB 2014).

4.4.2 Proposed Facilities

Several public and private agencies are considering seawater desalination as a way to diversify their existing water supply resources. The facilities outlined in Table 4-2 and illustrated on Figure 4-1 are in various stages of the planning process, and have been identified due to their proximity to the proposed Project and since they are reasonably foreseeable probable future projects.

Poseidon Resources - Huntington Beach Seawater Desalination Project

Poseidon Water's proposed Huntington Beach Seawater Desalination Plant is a 50 MGD facility currently in late-stage development. The desalination plant is proposed adjacent to the AES Huntington Beach Power Station and is scheduled to be operational by 2019. Orange County Water District (OCWD) does not have regulatory oversight or involvement with the facility's proposal, however, OCWD could play an important role in managing the region's water supply (OCWD 2016). OCWD is currently considering the purchase of this new source and is preparing for the possibility that regulators will allow this project to move forward. OCWD has approved a term sheet that indicates a desire to evaluate, in much greater detail, the ideal terms of a final agreement with Poseidon Water. The Final EIR for the Huntington Beach Facility was published on August 17, 2005, and a Final Subsequent EIR for the project was published on August 23, 2010. Currently, the Huntington Beach project is pending permits/approvals from the Coastal Commission and Regional Water Quality Control Board, and the State Lands Commission has initiated an EIR prior to considering issuing a lease for the intake and discharge tunnels.³

The proposed Huntington Beach Facility is proposed to be co-located on the Huntington Beach Generating Station (Station), where it would utilize the Station's existing intake/discharge pipelines for source water withdrawal and brine disposal. The Huntington Beach Seawater

³ The NOP was released November 18, 2016.

Desalination Plant would meet 8 percent of Orange County's water demands. The Huntington Beach Seawater Desalination Plant would be privately run by Poseidon Water, which would, in turn, sell 100 percent of the water to OCWD. Poseidon Water is currently in the final phases of the project's permitting process.

South Coast Water District - Doheny Ocean Desalination Project

Municipal Water District of Orange County (MWDOC) began exploring the feasibility of developing an ocean desalination facility in 2002 as part of a program to improve water supply reliability in south Orange County. MWDOC, in partnership with participating agencies, undertook a comprehensive investigation into the feasibility study of the Doheny Ocean Desalination Project. The feasibility investigation included three phases. Phases 1 and 2 Testing were successfully completed from 2005 to 2007 at Doheny State Beach in Dana Point. Phase 3, Extended Pumping and Pilot Plant Testing, was completed in 2012. The investigation found that the construction and operation of slant wells along Doheny State Beach is feasible.

South Coast Water District (SCWD) is proceeding with the project and recently issued a Notice of Preparation of the EIR on March 11, 2016 (SCWD 2016). The proposed ocean water desalination facility will produce up to 15 MGD of potable drinking water, with an initial demonstration phase of 4 to 5 MGD. The proposed facilities are located in Dana Point, including subsurface intake wells proposed at Doheny State Beach, and various conveyance lines connecting the intake and discharge facilities to existing District property located approximately 0.5 mile inland, adjacent to San Juan Creek.

San Diego County Water Authority - Camp Pendleton Seawater Desalination Project

In collaboration with the United States Marine Corps, the Water Authority is currently evaluating the feasibility of a potential regional desalination project located at Camp Pendleton in northern San Diego County. The Camp Pendleton Seawater Desalination Project would involve an ocean water desalination facility producing between 100 to 150 MGD. The Water Authority released the Camp Pendleton Seawater Desalination Project Feasibility Study in December 2009. The project is considered very early in the development process and the Water Authority is currently conducting additional technical studies for the project, including parallel piloting of a screened ocean intake and subsurface intake (SDCWA 2016 and 2017).

City of Oceanside - Seawater Desalination Project

The northern San Diego County city of Oceanside is considering the City of Oceanside Seawater Desalination Project as a way to supplement its existing supply. The City of Oceanside Seawater Desalination Project would involve an expansion of the existing City-owned Mission Basin Groundwater Purification Facility to include a seawater desalination component. Feedwater would be withdrawn at the mouth of the San Luis Rey River using subsurface intake technology and would then be conveyed through a series of pipelines to the existing Mission Basin Groundwater Purification Facility for RO. A preliminary feasibility study was completed in 2010 and most recently, the City has installed a series of test wells within Oceanside Harbor to analyze

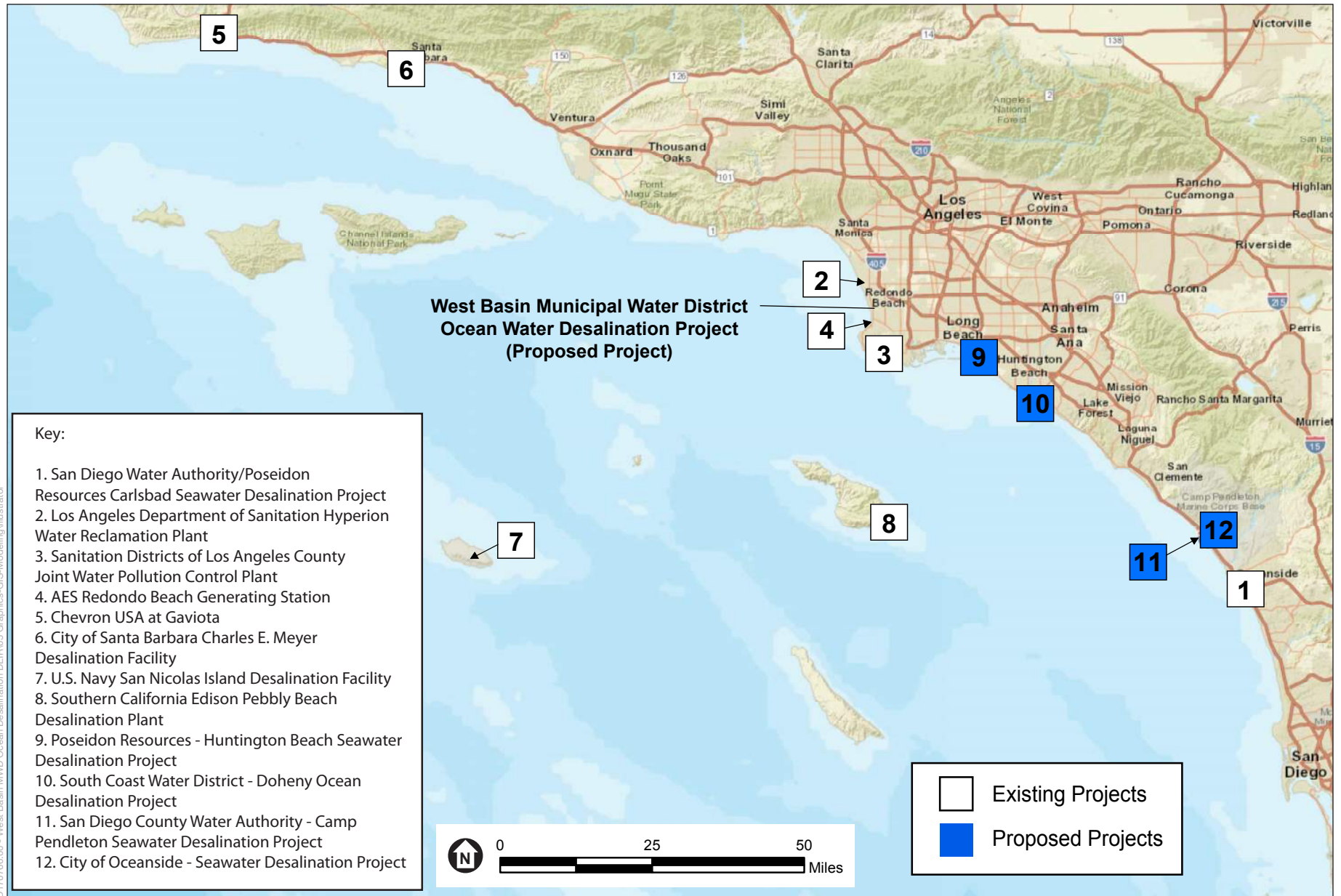
source water quality. The project is considered to be in the very early stages of development and, as such, further information is unavailable at this time.

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SOURCE: Michael Baker International, 2017

West Basin Ocean Water Desalination Project

Figure 4-1
Cumulative Ocean Intake/Discharge Projects

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