### 4.16 WATER SUPPLY

This section evaluates the water supply impacts of the proposed Plan. The information presented was compiled from multiple sources, including the San Diego County Water Authority (SDCWA), Metropolitan Water District (MWD), City of San Diego Water Department, and Caltrans.

As explained in Chapter 4.0, physical conditions as they existed in 2012 are used as the baseline for the impact analysis of this EIR, corresponding with the release of the NOP on December 14, 2012. As an urban water supplier, SDCWA is required to submit a complete version of their Urban Water Management Plan (UWMP) to the Department of Water Resources (DWR) every 5 years. SDCWA prepared the 2010 UWMP in accordance and compliance with the UWMP Act, and it will be updated in 2015, as required. In addition to the 2010 UWMP, SDCWA also prepares Annual Reports. When data from the Annual Report are relevant, the information is used to update findings of the 2010 UWMP. The 2013 Regional Water Facilities Optimization and Master Plan Update (2013 Master Plan Update; SDCWA 2013a) serves as a comprehensive evaluation of infrastructure requirements needed to ensure water supply to the SDCWA service area, and incorporates projections for future water demands and supplies from the 2010 UWMP. Therefore, some of the analyses within this Water Supply section are reliant on baseline data that is more recent than the December 2012 issuance of the NOP. These data are presented as the most relevant source of baseline information for understanding existing SDCWA water supply conditions.

#### 4.16.1 EXISTING CONDITIONS

**WATER SUPPLY AGENCIES**

**Metropolitan Water District**

MWD is a public agency formed in 1928 for the purpose of developing, storing, and distributing water to the residents of Southern California. MWD’s mission is to “to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way” (MWD 2014a). MWD imports water from two sources: (1) Colorado River water via the Colorado River Aqueduct; and, (2) the State Water Project (SWP) via the California Aqueduct from the Bay/Delta area in Northern California, which is owned and operated by the California Department of Water Resources.

MWD’s service area is nearly 5,200 square miles and includes portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. MWD serves approximately 19 million residents and is composed of 26 cities and water agencies, including 14 cities, 11 municipal water districts, and one county water authority, SDCWA. MWD’s member agencies serve residents in 152 cities and 89 unincorporated communities. Average daily delivery (5-year average as of December 31, 2013) is 4,900 acre-feet (AF). An acre-foot is 325,851.4 U.S. gallons, or roughly enough to supply two single-family households of four people for a year (MWD 2014b). MWD is a water wholesaler with no retail customers. To aid in planning future water needs, member agencies advise the agency of how much water they anticipate needing during the next 5 years. In addition, MWD works with its member agencies to forecast future water demand and develop emergency supply strategies to ensure a secure, long-term water supply.

In April 2015, as a result of the multi-year drought, MWD announced a 15 percent cut back on water deliveries to SDCWA and its other member agencies effective July 1, 2015 (SDCWA 2015c).
San Diego County Water Authority

SDCWA was formed in 1944 and became a member of MWD in 1946 to obtain Colorado River water for the San Diego region. SDCWA’s mission is to provide a “safe and reliable supply of water to its member agencies serving the San Diego region” (SDCWA 2014a). SDCWA has 24 member agencies: six cities, five water districts, three irrigation districts, eight municipal water districts, one public utility district, and one federal agency. Its service area includes about 951,000 acres and approximately 3.1 million people (SDCWA 2014b). The service area includes Carlsbad, Fallbrook, Helix, Lakeside, Olivenhain, Otay, Padre Dam, Rainbow, Ramona, Rincon del Diablo, San Dieguito, Santa Fe, South Bay, Vallecitos, Valley Center, Vista, and Yuima water districts; Camp Pendleton Marine Corps Base; and the cities of Del Mar, Escondido, National City, Oceanside, Poway, and San Diego. Coronado and Imperial Beach are not within SDCWA’s service area (MWD 2014c). SDCWA is MWD’s largest member agency, purchasing up to 30 percent of MWD’s supplies annually. The SDCWA entered into a Water Conservation and Transfer Agreement with Imperial Irrigation District (IID) in 1998. SDCWA also develops emergency supply strategies to ensure a secure long-term water supply for its member agencies.

As a result of the Governor’s Executive Order B-29-15 mandating a 25 percent reduction in the State’s water use due to drought conditions, as well as MWD’s cutback on water deliveries, the SDCWA Board on May 14, 2015 was scheduled to consider fiscal year 2016 water delivery reductions to its member agencies (SDCWA 2015c).

Water Systems Outside the SDCWA Service Area

The rural, eastern portion of the San Diego region is outside the SDCWA service area and completely dependent on local groundwater for water supply, including the unincorporated community of Boulevard, which is located within the boundary of the Campo-Cottonwood Sole Source Aquifer as described below. Groundwater is derived from on-site private wells, small community water systems, or private water companies. Approximately 65 percent of the unincorporated County of San Diego’s jurisdiction is totally dependent on groundwater. There are over 41,000 residents outside of the SDCWA service area (County of San Diego 2011). Table 4.16-1 provides a list of water supply providers outside of the SDCWA service area.

Several of these districts are not required to produce Urban Water Management Plans (UWMPs) because they either do not serve over 3,000 customers or do not distribute over 3,000 AF of water annually (County of San Diego 2011).

Borrego Valley Aquifer

Desert basins account for approximately 14 percent of the unincorporated area of the County, and are located in the easternmost portions of the County. These basins are characterized by extremely limited groundwater recharge but large storage capacity. When groundwater extraction exceeds recharge the result is an overdraft condition which is not sustainable (DPLU 2010). The Borrego Valley Aquifer has a well-documented groundwater overdraft condition, where year after year groundwater extraction exceeds the amount of groundwater recharge. The aquifer holds a large amount of groundwater in storage, estimated to be approximately 1.6 million AF of usable groundwater (County of San Diego 2011). Water levels have been declining for decades as a result of the overdraft condition, and groundwater production at current rates is not sustainable. While the majority of residences and commercial entities in Borrego Valley receive their water from the Borrego Water District (BWD), some private property owners within the BWD service area use private wells that rely on groundwater extracted from the Borrego Valley Aquifer. The vast majority of the water supplied to agricultural users within Borrego Valley comes from privately owned wells within the BWD service area (County of San Diego 2011).
**Campo-Cottonwood Sole Source Aquifer**

The Campo-Cottonwood Sole Source Aquifer has been designated by USEPA as a sole source aquifer under the Sole Source Aquifer (SSA) Program (Section 1424(e) of the Safe Drinking Water Act). It is located in the southeastern portion of the unincorporated County near the junction of I-8 and SR 94 near the U.S.-Mexico border. The community of Boulevard is located within the boundaries of the Campo-Cottonwood SSA. Boulevard is a Census designated place with a 2012 population of about 402 people according to the SANDAG Series 13 Regional Growth Forecast.

<table>
<thead>
<tr>
<th>Water Supply Provider</th>
<th>Community Served</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrego Water District</td>
<td>Anza Borrego and Borrego Springs</td>
<td>Local groundwater supply and sole source aquifer¹</td>
</tr>
<tr>
<td>Borrego Springs Park Community Service District *</td>
<td>Borrego Springs</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Campo Water Maintenance District *</td>
<td>Campo</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Canebrake County Water District *</td>
<td>Anza Borrego, seasonal visitors and part-time residents</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Cuyamaca Water District *</td>
<td>Cuyamaca</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Descanso Community Service District *</td>
<td>Descanso</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Jacumba Community Services District *</td>
<td>Jacumba</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Julian Community Service District *</td>
<td>Julian</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Live Oak Springs Water Company</td>
<td>Boulevard</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Majestic Pines Community Service District *</td>
<td>Julian</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Mootamai Municipal Water District *</td>
<td>Palan-Pauma</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Pauma Municipal Water District *</td>
<td>Pala-Pauma</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Pine Hills Mutual Water Company *</td>
<td>Julian/Pine Hills</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Pine Valley Mutual Water Company *</td>
<td>Pine Valley</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Questhaven Municipal Water District *</td>
<td>San Dieguito</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Rancho Pauma Mutual Water Company *</td>
<td>Pala-Pauma</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>San Luis Rey Municipal Water District *</td>
<td>Fallbrook, Valley Center, Pala-Pauma</td>
<td>Local groundwater supply</td>
</tr>
<tr>
<td>Wynola Water District *</td>
<td>Julian/Wynola</td>
<td>Local groundwater supply</td>
</tr>
</tbody>
</table>

Source: County of San Diego 2011

1- A sole source aquifer is an underground water supply designated by USEPA as the “sole” or “principal” source of drinking water for an area.

* denotes Water Supply Providers who either do not serve over 3,000 customers or do not distribute over 3,000 AF of water annually and are therefore not required to have an UWMP (LAFCO 2007, NY Times 2012, YMWD 2015, and CWD 2013)

Groundwater management in Borrego Valley is regulated through the BWD and the County Groundwater Ordinance. Because the Borrego Valley Aquifer the basin has not been adjudicated, individual well users are not regulated in the amount of groundwater they can extract (County of San Diego 2011).

In 2002, the BWD adopted a Groundwater Management Plan (GMP), which allowed the District to become the groundwater management agency for the Borrego Valley responsible for the stewardship of the aquifer and resolution of the overdraft condition. The GMP contains a summary of the Borrego overdraft condition, projections of future groundwater demand, and potential groundwater overdraft mitigation measures (County of San Diego 2011), which are further described below.
**Available Water Supplies**

**SDCWA Service Area**

In 2010, SDCWA relied on MWD to provide more than half of the water (331,825AF) in the region (SDCWA 2010). According to the SDCWA 2012 Annual Report (SDCWA 2012a) in 2012, MWD supplied 45 percent of SDCWA’s water. Other sources of supply to SDCWA were transfers from IID (14 percent), All American and Coachella Canal lining (13 percent), Conservation (11 percent), local surface water (10 percent), recycled water (4 percent), and groundwater (3 percent) (SDCWA 2012a).

The water transfer from IID is the subject of a long-term (45 to 75 years) water conservation and transfer agreement with IID. Under a 2003 agreement, SDCWA anticipates receiving 100,000 AF of water in 2015, with increases of up to 200,000 AF annually by 2021 (SDCWA 2010).

SDCWA also has a separate, 110-year agreement to receive water conserved by lining parts of the Coachella and All-American canals. The SDCWA has contracted rights to 77,700 AF per year of conserved water from these projects (SDCWA 2010).

In 2012, total regional use of potable water was less than it was in 1990, even with a population increase of approximately 30 percent over that time period (SDCWA 2015a). Table 4.16-2 shows annual regional water use from 2009 through 2012, excluding recycled water.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Water Use (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>583,286.6</td>
</tr>
<tr>
<td>2010</td>
<td>504,191.1</td>
</tr>
<tr>
<td>2011</td>
<td>509,562.1</td>
</tr>
<tr>
<td>2012</td>
<td>534,346.9</td>
</tr>
</tbody>
</table>

Source: SDCWA 2015a

**Imported Water Supplies**

SDCWA receives imported water from both the Colorado River and the Bay/Delta through MWD. Imported water enters the SDCWA system from the north by way of two aqueduct systems, the First and Second San Diego Aqueducts. The water is stored in surface reservoirs throughout the western part of the San Diego region. Some reservoirs are supplied with imported water; others store water from local drainage basins but feed reservoirs that also hold imported water. The reservoirs in the SDCWA water supply system are listed in Table 4.16-3 and shown in Figure 4.16-1.
Figure 4.16-1
Regional Water Supply Infrastructure
April 2015

- Aqueduct
- Reservoir used as water storage
- San Diego County Water Authority Service Area

Source: MWD 2013; SDCWA 2012
### Table 4.16-3
Reservoirs in the San Diego Region

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Operator</th>
<th>Usable Capacity (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrett Lake</td>
<td>City of San Diego</td>
<td>34,207</td>
</tr>
<tr>
<td>Lake Cuyamaca</td>
<td>Helix Water District</td>
<td>8,190</td>
</tr>
<tr>
<td>Dixon Reservoir</td>
<td>City of Escondido</td>
<td>2,545</td>
</tr>
<tr>
<td>El Capitan Reservoir</td>
<td>City of San Diego</td>
<td>109,992</td>
</tr>
<tr>
<td>Lake Henshaw</td>
<td>Vista Irrigation District</td>
<td>53,994</td>
</tr>
<tr>
<td>Lake Hodges</td>
<td>City of San Diego</td>
<td>28,422</td>
</tr>
<tr>
<td>Lake Jennings</td>
<td>Helix Water District</td>
<td>9,790</td>
</tr>
<tr>
<td>Loveland Reservoir</td>
<td>Sweetwater Authority</td>
<td>25,225</td>
</tr>
<tr>
<td>Lower Otay Lake</td>
<td>City of San Diego</td>
<td>46,026</td>
</tr>
<tr>
<td>Miramar Lake</td>
<td>City of San Diego</td>
<td>5,774</td>
</tr>
<tr>
<td>Morena Reservoir</td>
<td>City of San Diego</td>
<td>50,020</td>
</tr>
<tr>
<td>Lake Murray</td>
<td>City of San Diego</td>
<td>4,292</td>
</tr>
<tr>
<td>Olivenhain Reservoir</td>
<td>Olivenhain Municipal Water District</td>
<td>24,332</td>
</tr>
<tr>
<td>Lake Poway</td>
<td>City of Poway</td>
<td>2,550</td>
</tr>
<tr>
<td>Lake Ramona</td>
<td>Ramona Municipal Water District</td>
<td>11,800</td>
</tr>
<tr>
<td>San Dieguito Reservoir</td>
<td>City of San Diego</td>
<td>717</td>
</tr>
<tr>
<td>San Vicente Reservoir</td>
<td>City of San Diego</td>
<td>242,000(^\text{2})</td>
</tr>
<tr>
<td>Sutherland Reservoir</td>
<td>City of San Diego</td>
<td>29,396</td>
</tr>
<tr>
<td>Sweetwater Reservoir</td>
<td>Sweetwater Authority</td>
<td>26,800</td>
</tr>
<tr>
<td>Turner Lake</td>
<td>Valley Center Municipal Water District</td>
<td>1,670</td>
</tr>
<tr>
<td>Lake Wohlford</td>
<td>City of Escondido</td>
<td>2,905</td>
</tr>
</tbody>
</table>

1. Water in the Lake Hodges and San Dieguito Reservoirs is owned jointly by Santa Fe Irrigation District and the San Dieguito Water District, who pay the City of San Diego to operate the reservoirs.
2. The San Vicente Dam originally stood at 220 feet tall and could store up to 90,000 AF. The dam raise project increased the dam height by 117 feet with an additional 152,000 AF of storage capacity (SDCWA 2014d).

### System Regulatory Storage

System regulatory storage improves aqueduct system operations by providing storage reservoirs located at strategic points throughout the system that buffer the constant adjustments and enhance the ability to manage daily aqueduct operations. System regulatory storage allows for a constant delivery to the member agencies when pumps are stopped or started, and prevents spilling of water if a member agency suddenly rejects flow due to changes within the member agency system (SDCWA 2013a). SDCWA’s in-region storage includes the Olivenhain Reservoir, the San Vicente Reservoir, and Lake Hodges. In addition, SDCWA has contracted for out-of-region groundwater storage. Water treatment for almost all retail water service is provided by a member agency WTP, Twin Oaks Valley WTP, or by MWD’s Skinner WTP. This regional treated-water capacity provides flexible and robust local water treatment options and supports member agencies’ constructed facilities.
Recycled Water

Recycled water plays an important role in water conservation. The principal use of recycled water is for landscape irrigation, including landscaping associated with transportation facilities such as freeways, highways, and rail corridors, and irrigation of parks, campgrounds, golf courses, school fields, agricultural lands, and for dust suppression at construction sites. Recycled water may also be used for flushing toilets and urinals. Approximately 30,000 AF of recycled water is reused within the SDCWA’s service area annually (SDCWA 2014e).

The City of San Diego operates two water recycling plants, the South Bay Water Reclamation Plant and the North City Water Reclamation Plant. These plants treat wastewater to a level that is approved for irrigation and other nondrinking or nonpotable uses. The North City plant was designed to produce 30 MGD, and the South Bay plant has the capability to produce 15 MGD (City of San Diego 2014). In 2012, the North City plant produced a daily average of 5.7 MGD, for an annual total of approximately 2.1 billion gallons of reclaimed water (City of San Diego 2012a). The South Bay Plant produced a daily average of 3.4 MGD, for an annual total of approximately 1.2 billion gallons of beneficial reuse water (City of San Diego 2012b).

Caltrans is one of the largest users of recycled water in the San Diego region and is implementing a program to convert irrigation from potable water to recycled water wherever possible. Caltrans is installing water lines to bring recycled water to I-5 north coast, I-15 from Escondido to Friars Road in San Diego, SR 52, and the eastern portion of SR 56. Caltrans also plans on expanding recycled water use in the southern part of the region on I-5, I-805 and SR-905 (Caltrans 2014a).

Water Treatment Facilities

SDCWA receives both treated and untreated water from MWD. Treated water provided by MWD is filtered at the Robert A. Skinner Treatment Plant in Hemet (Riverside County) and transported to the San Diego region for use via the first and second aqueducts operated by SDCWA. Untreated water received by SDCWA is treated prior to use by the public at one of the 12 water treatment facilities owned and operated by SDCWA or one of its member agencies. These water treatment facilities are listed in Table 4.16.4. Water treatment plants (WTPs) also treat water from local sources.

<table>
<thead>
<tr>
<th>Water Treatment Plant</th>
<th>Operator</th>
<th>Capacity (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert A. Weese Filtration Plant</td>
<td>City of Oceanside</td>
<td>25</td>
</tr>
<tr>
<td>Twin oaks Valley WTP</td>
<td>SDCWA</td>
<td>100</td>
</tr>
<tr>
<td>Escondido-Vista WTP</td>
<td>City of Escondido and Vista Irrigation District</td>
<td>65</td>
</tr>
<tr>
<td>David C. McCollom WTP</td>
<td>Olivenhain Municipal Water District</td>
<td>34</td>
</tr>
<tr>
<td>Lester J. Berglund WTP</td>
<td>City of Poway</td>
<td>24</td>
</tr>
<tr>
<td>R.E. Badger Filtration Plant</td>
<td>Santa Fe Irrigation District</td>
<td>40</td>
</tr>
<tr>
<td>Miramar WTP</td>
<td>City of San Diego</td>
<td>140*</td>
</tr>
<tr>
<td>R.M. Levy WTP</td>
<td>Helix Water District</td>
<td>106</td>
</tr>
<tr>
<td>Alvarado WTP</td>
<td>City of San Diego</td>
<td>150*</td>
</tr>
<tr>
<td>Robert A. Perdue WTP</td>
<td>Sweetwater Authority</td>
<td>30</td>
</tr>
<tr>
<td>Otay WTP</td>
<td>City of San Diego</td>
<td>35.5</td>
</tr>
</tbody>
</table>

*Pending approval for certification for additional capacity (200–215 MGD).
Source: SDCWA 2013a
Groundwater Supplies

SDCWA does not currently hold groundwater basin rights, nor does it own or operate groundwater facilities within the region. Although opportunities are limited, groundwater is currently used to meet a portion of the municipal water demands throughout SDCWA’s service area from MCB Camp Pendleton in the north to National City in the south. The 2010 UWMP provides a general description of: municipal groundwater development within SDCWA’s service area, the issues associated with development of this supply, and projected agency yields. Between 2005 and 2010, water supply agencies within the SDCWA service area produced an annual average of approximately 18,300 AF of potable water from groundwater (SDCWA 2010). Many private well owners also draw on groundwater to help meet their domestic water needs, which helps to offset demand for imported water.

Although the amount of groundwater pumped by private wells is significant, it cannot be accurately quantified nor estimated within SDCWA’s entire service area (SDCWA 2010). Groundwater production in SDCWA’s service area is limited by a number of elements, including lack of storage capacity in local aquifers, availability of groundwater recharge, and degraded water quality. Narrow river valleys filled with shallow sand and gravel deposits are characteristic of the most productive groundwater basins in the San Diego region. Outside of the principal alluvial aquifers and farther inland, groundwater occurs in fractured crystalline bedrock and semiconsolidated sedimentary deposits where yield and storage are limited and the aquifers are best suited for lower-yielding domestic water supply wells. There are 19 alluvial groundwater basins throughout the region, and SDCWA is exploring undeveloped supplies that may exist (SDCWA 2015b).

4.16.2 REGULATORY SETTING

FEDERAL LAWS, REGULATIONS, PLANS, AND POLICIES

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) (42 USC Sections 300(f) et seq.) gives USEPA the authority to set drinking water standards (40 CFR 141.1 et seq.). Drinking water standards apply to public water systems, which provide water for human consumption through at least 15 service connections, or regularly serve at least 25 individuals. There are two categories of drinking water standards, the National Primary Drinking Water Regulations (NPDWR) and the National Secondary Drinking Water Regulations (NSDWR). The NPDWR are legally enforceable standards that apply to public water systems. NPDWR standards protect drinking water quality by establishing maximum contaminant levels (MCLs) specific drinking water contaminants that present a risk to human health. The NSDWR set non-mandatory water quality standards for 15 contaminants that are not considered to present a human health risk.

STATE LAWS, REGULATIONS, PLANS, AND POLICIES

Department of Water Resources California Water Plan Update 2013

The California Water Plan (CWP) is “the State’s strategic plan for managing and developing water resources statewide for current and future generations” (CWP 2013). The CWP focuses on three themes: (1) integrated water management, (2) government agency alignment, and (3) strategies to invest in innovation and infrastructure. The CWP also includes greater detail and more regionally specific climate change information than the previous update including, but not limited to, regionally appropriate and statewide adaptation strategies and mitigation strategies.
California Water Action Plan

The California Water Action Plan (CNRA 2014) was developed in 2014 to meet three broad objectives: a more reliable water supply; the restoration of important species and habitat; and a more resilient, sustainably managed water resources system (water supply, water quality, flood protection, and environment) that can better withstand inevitable and unforeseen pressures in the coming decades. Covering the period from 2014 to 2018, the actions described in the California Water Action Plan will move California toward more sustainable water management by providing a more reliable water supply for farms and communities, restoring important wildlife habitat and species, and helping the state’s water systems and environment become more resilient.

The Water Action Plan does not replace local efforts. Successful implementation of the plan would require increased collaboration among state, federal, and local governments; regional agencies; tribal governments; the public and private sectors. Actions listed in the Water Action Plan include:

- Make conservation a California way of life;
- Increase regional self-reliance and integrated water management across all levels of government;
- Achieve the co-equal goals for the Delta;
- Protect and restore important ecosystems;
- Manage and prepare for dry periods;
- Expand water storage capacity and improve groundwater management;
- Provide safe water for all communities;
- Increase flood protection;
- Increase operational and regulatory efficiency; and
- Identify sustainable and integrated financing opportunities.

State Water Resources Control Board Emergency Conservation Regulations

On January 17, 2014 the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions. On April 25, 2014 the Governor issued a proclamation of continued state of emergency based on continued drought conditions.

Due to the continued drought conditions, in March 2015 the State Water Board re-adopted California Code of Regulations, title 23, sections 863, 864, and 865 (SWRCB 2015). These updated emergency regulations consist of four main types of requirements: a prohibition on certain irrigation practices, restrictions on certain commercial activities, an order for all urban water suppliers to implement mandatory restrictions on outdoor irrigation, and an order for water suppliers with 3,000 or more service connections to provide monthly data on water production, compliance actions, and outdoor water conservation measures being implemented. The regulation also includes reporting requirements.

Executive Order B-29-15

On April 1, 2015 the Governor signed Executive Order B-29-15 requiring the State Water Resources Control Board to impose additional restrictions to achieve a statewide 25 percent reduction in potable urban water use through February 28, 2016 compared to the amount used in 2013. The order includes measures to save water by reducing per capita water use, requires increased enforcement, includes water conservation pricing measures, prioritizes and streamlines water supply infrastructure projects, and invests in new water saving technologies (State of California, 2015a and 2015b). The SWRCB adopted regulations to implement the Executive Order on May 6, 2015 (SCWA 2015).
Regulations Related to Recycled Water

Under Code of California Regulations Title 22, the state Department of Public Health established statewide effluent bacteriological and treatment reliability standards for recycled water uses. (On July 1, 2014, the state’s Drinking Water Program was transferred to the SWRCB.) The standards are based on the potential for human contact with recycled water. The RWQCB has established and enforces requirements for the application and use of recycled water. Permits are required from the RWQCB for any recycling operation. Applicants for a permit are required to demonstrate that the proposed recycled water operation is in compliance with Title 22 and will not exceed the ground and surface water quality objectives in the regional basin management plan. In the San Diego region, the basin management plan is the Water Quality Control Plan for the San Diego Basin 9 (Basin Plan) prepared and administered by the San Diego RWQCB.

The Water Conservation Act of 2009

The Water Conservation Act of 2009 (SB x7-7 of 2009) sets water conservation targets and efficiency improvements for urban and agricultural water suppliers. The legislation establishes a statewide target to reduce urban per capita water use by 20 percent by 2020. Urban retail water suppliers are required, individually or on a regional basis, to develop an urban water use target by December 31, 2010, to meet their target by 2020, and to meet an interim target (half of their 2020 target) by 2015. Urban water suppliers cannot impose conservation requirements on process water (water used in production of a product) and are required to employ two critical efficient water management practices—water measurement and pricing. Urban retail water suppliers must include in a water management plan, to be completed by July 2011, the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use. Effective in 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans.

California Urban Water Management Planning Act

The California Urban Water Management Planning Act (Water Code Part 2.6) states that each urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 AF of water annually, should make every effort to ensure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years by preparing a urban water management plan (UWMP) and updating it every 5 years. The deadline for submitting 2015 UWMPs to DWR has been extended to July 1, 2016. The California Urban Water Management Planning Act describes the contents of UWMPs, and requires each agency’s UWMP to assess the reliability of the agency’s water resources over a 20-year planning horizon.

Water Supply Planning

SB 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. The intent of SB 610 is to ensure that sufficient water supplies are available for growing communities. SB 610 requires local public water providers with more than 3,000 service connections to prepare a Water Supply Assessment (WSA) for any project that is subject to CEQA and meets specified minimum size criteria.
The WSA must document sources of water supply, quantify water demands, and compare future water supply and demand to show that sufficient water will be available to serve the project. Water supply must be assessed for normal, single dry, and multiple dry water years during a 20-year forecast. If supplies are found to be insufficient to serve the project, the WSA must include plans for acquiring sufficient supplies. The WSA must be included in the CEQA document for the project.

SB 221 (Chapter 642, Statutes of 2001) applies to subdivisions of more than 500 dwelling units. Like SB 610, it is intended to ensure an adequate water supply for new development. SB 221 requires that approval of a tentative map include a requirement that a sufficient water supply is available. Government Code Section 66473.7(k) contains special provisions for SB 221 compliance in the San Diego region.

**California Groundwater Management Act**

The Groundwater Management Act (Water Code Section 10750 et seq.) provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMPs) in state-designated groundwater basins. GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities’ maintenance, and water quality. The Sustainable Groundwater Management Act (see below) would prohibit a new GMP from being adopted or an existing GMP from being renewed, beginning January 1, 2015.

**Sustainable Groundwater Management Act**

The Sustainable Groundwater Management Act (Chapters 346, 347, and 348, Statutes of 2014) encompasses three bills: AB 1739, SB 1168, and SB 1319 of 2014. The Act focuses on the importance of local action in order to achieve groundwater sustainability, and allow local agencies to tailor sustainable groundwater plans to their own economic and environmental needs. The Act creates a timeline for its implementation: by 2017, local groundwater management agencies must be identified; groundwater sustainability plans must be adopted for basins designated as high- or medium-priority currently being over-drafted by January 31, 2020; groundwater sustainability plans must be adopted for all other high- and medium-priority basins by January 31, 2022; and by 2040 all high- and medium-priority groundwater basins must achieve sustainability. SWRCB has the authority to get involved in sustainability plan preparation if deadlines are not met by local agencies. The Sustainable Groundwater Management Act is meant to stop over-drafting of groundwater supplies and to reduce the potential of groundwater contamination by salt water infiltration. It aims to supply California with a reliable water source for the future.

**REGIONAL AND LOCAL LAWS, REGULATIONS, PLANS, AND POLICIES**

Both SDCWA and MWD and have developed plans that address long-term water supply and demand, as well as catastrophic supply interruption and emergency storage. These plans, as they relate to the issues in this EIR, are described below.

**MWD Integrated Water Resources Plan, 2010 Update**

Developed in collaboration with all of MWD’s member agencies, MWD’s Integrated Water Resources Plan (IWRP) (MWD 2010a) adopts an “adaptive integrated resources management strategy.” A number of uncertainties could affect future water supply: climate change, cost and use of energy, potential policy and permitting restrictions, endangered species protections, and demographic unknowns. To achieve maximum supply reliability in a cost-effective and adaptive manner, MWD will rely on three main management components to build on existing supplies:
A core resources strategy will manage known water supply and demand conditions to stabilize MWD’s traditional imports from the Colorado River and Northern California through the Sacramento-San Joaquin Delta. MWD and its member agencies will advance water use efficiency through conservation, recycling, local supply development such as groundwater recovery, and seawater desalination.

A cost-effective “supply buffer” will enable the region to adapt to future circumstances and foreseeable challenges. The buffer seeks to help protect the region from possible shortages caused by conditions that exceed the core resources strategy, starting with increased conservation and water-use efficiency on a region-wide basis.

MWD will determine alternative supply options for long-range planning. If future changed conditions—such as climate change or the availability of resources—exceed what is covered by MWD’s core resources and supply buffer, these alternatives would provide a greater contribution to water reliability than MWD’s imported water sources or any other single supply [MWD 2010a]).

**MWD Regional Urban Water Management Plan**

The 2010 MWD Regional Urban Water Management Plan (RUWMP) was prepared in compliance with Water Code Sections 10608.36 and 10610 through 10656 of the Urban Water Management Planning Act. Information in the 2010 RUWMP may be used by local water suppliers in preparation of their own UWMP and represents current available planning projections of supply capability and demand. The RUWMP describes MWD’s planning activities and explains how the agency will manage the region’s water resources to ensure a reliable water supply for the region. The RUWMP also addresses the issue of water quality and steps taken to deliver high-quality water to MWD’s service area (MWD 2010b).

**SDCWA Urban Water Management Plan and Water Use Efficiency Programs**

SDCWA’s 2010 UWMP presents strategies designed to enhance water supply reliability through diversification of water sources, compliance with Water Conservation Act of 2009 conservation targets, and improvement of supply and delivery infrastructure. Some of the more prominent strategies are the All-American Canal and Coachella Canal Lining Projects, development of a regional seawater desalination plant located in Carlsbad (SDCWA 2014c), construction of the San Vicente Dam Raise and Carryover Storage Project, and supporting the development of additional local supplies. Combined with strategies are SDCWA’s outreach efforts to raise public awareness of growing water supply and water rate challenges and increased long-term residential, commercial, and public sector water use efficiency. The 2010 UWMP is based on SANDAG’s Series 12 Regional Growth Projections.

Additionally, SDCWA’s Water Use Efficiency Policy Principles include how the SDCWA may implement and administer regional water use efficiency projects and programs where economies of scale, geography considerations, or other member agency circumstances make a regional program more efficient or cost-effective. The principles also provide additional direction to staff regarding efficiency projects or programs affecting SDCWA, its member agencies, and/or regional water management and use (SDCWA 2012b). The principles include policies pertaining to member agency support, funding and resources, program performance, outreach and education, and regulation and legislation.
San Diego Integrated Regional Water Management Plan (IRWMP)

The 2013 IRWMP presents an overarching assessment of the San Diego region’s water supply, water quality, and ecosystem challenges and provides recommendations for sustainable answers (IRWM 2013). The 2013 San Diego IRWMP focuses on four goals:

- Improve the reliability and sustainability of regional water supplies;
- Protect and enhance water quality;
- Protect and enhance our watersheds and natural resources; and
- Promote and support sustainable integrated water resource management.

SDCWA Regional Water Facilities Optimization and Master Plan Update

SDCWA’s Regional Water Facilities Optimization and Master Plan Update (Master Plan Update) (SDCWA 2013a) is a comprehensive evaluation of infrastructure requirements needed to meet SDCWA’s mission of providing a safe and reliable water supply to its member agencies. It is based on projections for future water demands and water supplies from the 2010 UWMP. The Master Plan Update identifies projects needed to ensure reliability and ability to serve projected water demands to 2035. Projects include expanded water conveyance facilities, new water storage facilities, upgraded pump stations, and pipeline relining.

Local Urban Water Management Plans and Water Use Efficiency Programs

The California Urban Water Management Planning Act (Water Code Part 2.6) requires each of the SDCWA’s 24 member agencies to prepare a UWMP to support long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. SDCWA’s member agencies’ UWMPs reflect and are coordinated with the SDCWA’s UWMP. Local agencies with an Urban Water Management Plan include the City of Carlsbad, the City of Escondido, the Fallbrook Public Utility District, Helix Water District, Lakeside Water District, the City of Oceanside, Otay Water District, Rainbow Municipal Water District, Rincon Del Diablo Municipal water District, Ramona Municipal Water District, the City of San Diego, San Dieguito Water District, Santa Fe Irrigation District, Sweetwater Authority, Valley Center Municipal Water District, Vallecitos Water District, Vista Irrigation District, Rainbow Municipal Water District, the City of Poway, Olivenhain Municipal Water District, and Padre Dam Municipal Water District (DWR 2012).

SDCWA also runs a water conservation program known as WaterSmart, which is implemented by SDCWA member agencies. The online program offers various resources, programs, and incentives for residences, businesses, Home Owner Associations, and agricultural use management programs, as well as information for teachers and students, WaterSmart tips, eGuides, and rebate offers (SDCWA 2013b).

San Diego County Groundwater Ordinance

The County Groundwater Ordinance states that a project listed in Section 67.711 (Application) of the Ordinance that will extract or use at least one acre-foot (325,851 gallons) of groundwater per year shall include one or more groundwater use reduction measures, identified in the Ordinance. The groundwater use reduction measures shall fully offset the amount of groundwater that the proposed project will use and shall result in “no net increase” in the amount of groundwater extracted (County 2013).
Borrego Valley Groundwater Management Plan

In 2002, the BWD adopted a Groundwater Management Plan (GMP) (DPLU 2010) which allowed the District to become the groundwater management agency for the Borrego Valley aquifer as allowed under State Statute AB 3030. The adoption of the GMP thus placed the BWD as the responsible agency for the stewardship of the aquifer and resolution of the overdraft condition. The GMP was updated in 2006 and contains a summary of the Borrego overdraft condition, projections of future groundwater demand, and identification of potential groundwater overdraft mitigation measures. Specifically, it set out goals to achieve including: (1) development of programs to assist in stabilizing the overdraft of the aquifer, (2) seek programs to provide a long-term supply of water for the valley, (3) continue to expand the knowledge of the water resources of the aquifer, (4) development and implementation of conservation programs, (5) work with state and county agencies to try to minimize any adverse impact new land uses would have on groundwater resources, (6) develop the ability to obtain funding for acquisition of actively irrigated agricultural land, and (7) evaluate the feasibility of acquiring land in adjacent basins and exploring for such water to be transported for use in Borrego Valley.

Recycled Water Regulations

The County Department of Environmental Health (DEH) regulates the use of recycled water through a delegation agreement with the State of California. The purpose is to protect the public from health risks associated with cross-connections of recycled water and drinking water supplies, as well as to prevent health risks from body contact with recycled water. DEH’s Land and Water Quality Division reviews recycled water use plans and conducts site inspections to ensure drinking water supplies are not contaminated with recycled water. Spray irrigation sites are monitored to ensure the recycled water irrigation does not present a risk to the public. Recycled water sites must also pass a cross-connection control shutdown test when installed and every 4 years after installation (County of San Diego 2014).

The City of San Diego maintains the policy that recycled water be used for any purpose approved for recycled water use when it is economically, financially, and technically feasible, as mandated by Ordinance 0-17327 (City of San Diego 2008). The policies regarding recycled water use are documented in the Rules and Regulations for Recycled Water Use and Distribution within the City of San Diego (2008), which lists the following goals:

- Prevent direct human consumption of recycled water through adherence to all applicable rules and regulations and laws which include a strict cross-connection/backflow prevention program.
- Prevent cross-connection between recycled and potable water systems.
- Isolate contamination by other sources, such as wastewater, sludge, urban runoff, or other substances which may come into contact with the recycled water.

4.16.3 SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines provides criteria for evaluating the significance of a project’s environmental impacts on water supply, in the form of Initial Study checklist questions. Unless otherwise noted, the significance criteria specifically developed for this EIR are based on the checklist questions in Appendix G. In some cases, SANDAG has combined checklist questions, edited their wording, or changed their location in the document in an effort to develop significance criteria that reflect the programmatic level of analysis in this EIR and the unique nature of the proposed Plan.

Appendix G addresses water supply under Utilities and Service Systems (XVII. (b) and (d)). Because of the importance of water supply issues in the San Diego region and throughout California, this EIR addresses the water supply impacts of the proposed Plan in a stand-alone section. For the purposes of this EIR, the proposed Plan would have a significant water supply impact if it would:

**WS-1** Increase demands on existing water supplies such that they would be inadequate to serve future demands, and new or expanded water supplies or entitlements would be needed.

**WS-2** Require or result in the construction of new water facilities or the expansion of existing facilities to adequately meet forecast demand or capacity needs, the construction of which could cause a significant environmental effect.

4.16.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

**WS-1** INCREASE DEMANDS ON EXISTING WATER SUPPLIES SUCH THAT THEY WOULD BE INADEQUATE TO SERVE FUTURE DEMANDS, AND NEW OR EXPANDED WATER SUPPLIES OR ENTITLEMENTS WOULD BE NEEDED.

ANALYSIS METHODOLOGY

For 2020 and 2035 impacts of forecasted regional growth and land use change within the SDCWA service area, estimated water demand resulting from forecasted growth under the proposed Plan is compared to projected water demand and projected available supplies through 2035 as identified in the SDCWA 2013 Regional Water Facilities Optimization and Master Plan Update (2013 Master Plan Update) and 2010 UWMP. The analysis of regional water demands conducted in the 2013 Master Plan is based on projections of both normal and dry-year annual demands from the 2010 UWMP. Normal, dry, and multiple dry-year annual demands were consistent with those in the 2010 UWMP for each member agency. Information from SDCWA Annual Progress Reports and SDCWA’s anticipated 2015 responses to drought conditions is used to supplement analysis when appropriate. For the 2050 analysis of regional growth and land use change, projected per capita usage in gallons per day multiplied by forecasted future population is used to project water demand in 2050.

The analysis also addresses the impacts of forecasted regional growth and land use change on groundwater supplies outside of the SDCWA service area. It addresses increased use of groundwater and changes to groundwater discharge under the proposed Plan relative to the existing condition. Factors affecting groundwater recharge (e.g., precipitation and infiltration) as well as discharge (draining of sloughs) are discussed.
4.16 Water Supply

For transportation network improvements, a qualitative analysis of construction water demand is provided, such as water usage required for the production of concrete and dust suppression. In addition, a qualitative analysis is included for operational water demands (e.g., landscape irrigation) of transportation network improvements.

During the timeframe of the proposed Plan, climate change effects that are likely to exacerbate the proposed Plan’s impacts on regional water supplies include, but are not limited to, higher annual average temperatures, more days of extreme high temperatures, longer and more humid heat waves, less frequent and more intense rainstorms and more frequent flood events, more intense and more frequent drought, increased evaporation from soil and reservoirs, more frequent and severe wildfires, and increased threats to the survival of some plant and animal species and loss of habitat. In general, these climate change effects would increase between 2020 and 2050.

The 2010 UWMP discusses climate change and its potential impacts on water supply and demand. The main conclusions were that climate change impacts are not likely to be significant during the 2010–2035 planning period and that the primary effects of climate change will be experienced as shortages of imported water supply sources and not as significant increases in water demands. The annual average temperature is projected to increase by about 1°Centigrade by the end of 2035 in comparison to the simulated historical average over 1971 through 2000. In general, larger increases in demand are projected for the member agencies that are located inland (2.2 percent) and smaller changes in coastal regions (1.4 percent) (SDCWA 2013a). Climate change effects on water supply in the San Diego region are discussed in more detail in Appendix F.

County of San Diego General Plan Update EIR Appendix D evaluates the groundwater impacts of forecasted growth and land use change within groundwater dependent areas in the unincorporated County, including the areas in and around the Campo-Cottonwood SSA and the community of Boulevard. Figure 3.8 indicates that the areas in and around the Campo-Cottonwood SSA and the community of Boulevard have about 99 percent of groundwater in storage in the existing condition. Under implementation of forecasted growth and land use change in these areas, a minimum of about 96 percent of groundwater storage would remain available in these areas. The proposed Plan’s forecast of future growth and land use change is based on the County’s adopted General Plan, and is therefore consistent with the forecasted growth assumed in the County’s groundwater study. Under the proposed Plan, Boulevard would grow from about 402 people and 98 jobs in 2012 to about 447 people (an increase of 45 people from 2012) and 98 jobs (no increase from 2012) by 2020, 567 people (an increase of 165 people from 2012) and 450 jobs (an increase of 352 jobs from 2012), and 548 people (an increase of 146 people from 2012) and 571 jobs (an increase of 473 jobs from 2012). Moreover, the proposed Plan does not propose any transportation network improvements or programs within the Campo-Cottonwood SSA or Boulevard community. Based on this information, implementation of the proposed Plan would not increase demands on existing water supplies within the Campo-Cottonwood SSA such that they would be inadequate to serve future demands, and therefore new or expanded water supplies or entitlements would not be needed in 2020, 2035, and 2050. This impact is less than significant. Water supply impacts within the Campo-Cottonwood SSA are not addressed further in this EIR.

**IMPACT ANALYSIS**

**2020**

**Regional Growth and Land Use Change**

**SDCWA Service Area**

In 2010, water demand within the SDCWA service area was 566,443 AF. The anticipated baseline demand for a normal water year in 2020, including compliance with SBX7-7, which sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020, is forecast to be 675,089 AF. Single dry-year demand estimates in 2020 are forecast to be 718,458 AF with SBX7-7 implementation, and multiple dry-year demand forecasts are 740,326 AF in 2018 (SDCWA 2010). SBX7-7 requires that agencies prepare dry period scenarios spanning multiple consecutive years. SDCWA used statistical model parameters, described further in the 2010 UWMP, to develop three consecutive dry-year demand projections; therefore, multiple dry-year demand projections exist for 2012 through 2014 and 2016 through 2018 for this horizon year.

Total projected supplies for a normal water year, including SDCWA and member agency supplies, are forecast to be 675,089 AF in 2020 and 718,458 AF in a single dry year. If MWD, SDCWA, and member agency supplies are developed as planned, along with achievement of the SBX7-7 retail conservation target and Executive Order B-29-15 reductions, the 2010 UWMP anticipated no shortages within SDCWA’s service area in a normal water year and single dry water year through 2020 (SDCWA 2010). By 2020, desalinated seawater may be added to the regional supply. A desalination plant is currently under construction in Carlsbad. The new plant is designed to produce 50 million gallons a day (MGD), or 56,000 AF per year, of desalinated water, enough to supply potable water to approximately 300,000 residents of the San Diego region. SDCWA has a 30-year Water Purchase Agreement for the entire output of the plant (Carlsbad Desalination Project 2014).

**SDCWA Master Plan Update**

The focus of the 2013 Master Plan Update is to optimize existing infrastructure and maintain the flexibility to adjust to a range of future regional planning outcomes through 2035 (SDCWA 2013a). The 2013 Master Plan Update describes the current aqueduct system as composed of a robust system of pipelines, reservoirs, pump stations, and treatment facilities. Recent investments developing increased storage at the San Vicente Reservoir, new treatment facilities at the Twin Oaks Valley WTP, and a new drought-proof local supply from the Carlsbad Desalination Project further bolster regional supply reliability (SDCWA 2013a). With the addition of these new facilities, along with planned near-term investments under SDCWA’s Asset Management Program that will maintain the service life of existing facilities, based on the 2013 Master Plan Update, the Master Plan Update anticipated that the aqueduct system was capable of meeting regional demands through the mid-2020s.

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2 The SDCWA 2010 UWMP is based on the SANDAG Series 12 Regional Growth Forecast. The SANDAG Series 13 Regional Growth Forecast, which forms the basis of the proposed Plan, forecasts slightly lower population growth by 2020 (3,124 fewer people, 0.09% lower) relative to the Series 12 Regional Growth Forecast. Therefore, the 2010 UWMP conclusions regarding adequacy of water supply to serve 2020 growth are also valid for growth under the proposed Plan.
Borrego Valley Aquifer

As described in Section 4.16.1, the Borrego Valley Aquifer has not been adjudicated. Therefore, individual well users are not regulated in the amount of groundwater they can extract, and future availability of supplies is uncertain. All BWD water comes from groundwater. The BWD would experience growth under implementation of the proposed Plan, thereby increasing the demand for potable water. Under the proposed Plan, by 2020, 159 additional residential units would be developed in the Borrego Valley, continuing to exacerbate the overdraft condition (SRA Forecast 2015).

Existing groundwater impacts already occurring would continue to worsen as groundwater usage increases due to increased growth. Current impacts include dry wells, decreased well efficiency, and increased pumping costs as water levels continue to decline. Under the proposed Plan, these impacts would continue and more wells would need to be replaced as water levels drop. The Borrego Water District (BWD) Integrated Water Resources Management Plan (IWRMP) (BWD 2009) discusses several alternative non-local water supply opportunities. Three adjacent supply sources are in proximity to the Borrego Valley. The areas include Clark Dry Lake, which lies just to the east of the Coyote Creek Fault on the Borrego-Salton Seaway (county highway S-22), the Dr. Nel property, near the intersection of Highway 78 and Borrego Springs Road, and the Ocotillo Wells/Allegretti Farms area, located in the Lower Borrego Valley. All of these projects have the potential to supplement the water supply of the Borrego Valley; however, the export of water from these areas could impact the area’s natural resources.

The Clark Dry Lake is approximately 13,000 acres and is home to two small ranches, a historical rock house, and a sand and gravel quarry, and a large portion of the basin is overlain by Anza Borrego State Park. If initial water testing results are favorable, an alternative could include construction of wells and a pipeline to convey the water to BWD, a distance of about 8 miles, and the salinity of the water could require construction of a desalination and brine disposal facility (BWD 2009). As with the Clark Dry Lake project, if water tests are favorable, the Dr. Nel property would require construction of several production wells and a conveyance pipeline of approximately 7 miles in length. The Allegretti Farms project would deliver water to the BWD about 15.5 miles from the farm and would also require land acquisition costs. In addition to wells and conveyance pipelines, the projects would require infrastructure such as extensions of electrical systems, and the Allegretti Farms project would require a pumping station and collection system (BWD 2009).

Therefore, these alternative water supply projects, or combining and phasing of these projects, have the potential for various short- and long-term environmental effects, including impacts to the biological, cultural, geological and mineral, and land-use resources, as well as short-term impacts related to the construction of the wells, pipelines, and possible desalination facilities, which may also include a short-term transportation impact and air quality impact. These impacts and the mitigation measures to minimize these impacts would be similar to those described in WS-2, Table 4-16.5, which addresses the construction of new water facilities or the expansion of existing facilities to adequately meet forecast demand or capacity needs.

In addition, BWD has considered obtaining a source of water from the Colorado River, State Water Project, or other sources. BWD would acquire a contract to purchase and the water would be delivered through the State Water Project, then through MWD’s system to IID, which, dependent upon whether the water was distributed directly into the distribution system versus groundwater recharge, could require the construction of a water treatment facility (BWD 2009).
Additionally, importation projects could potentially utilize water obtained from other states with Colorado River rights, or purchase of product water from a desalination plant, such as the plant in Carlsbad. Impacts and mitigation measures would be similar to those listed above and in WS-2. Another supply opportunity discussed in the BWD IWRMP is the construction of a pipeline and two pumping stations to deliver water from the IID West Side Canal to the BWD distribution system. A 24-inch-diameter pipeline would convey approximately 10,000-15,000 AF per year to BWD (BWD 2009). The pipeline would be 46 miles long and the route would utilize existing rights-of-way to minimize environmental issues and to facilitate construction.

Additional supply projects described in the IWRMP include a Coachella Valley Water District project, which also involves construction of a pipeline, and a Conjunctive Use or Water Banking project, which is when surface water, in excess of water requirements in wet years, is stored in ground water basins. During dry years, when surface supplies cannot meet water needs, the stored waters are withdrawn to meet the deficiency in the surface supply system (BWD 2009). The IWRMP considers the importing of water from IID and a phased project with the Dr. Nel and Allegretti Farms parcels to be of the highest priority, as those projects were evaluated the most favorably in helping to reduce the overdraft. These opportunities are further discussed in the 2009 BWD IWRMP.

Conclusion

Prior to the most recent MWD and planned SDCWA cutbacks in water deliveries due to the drought, reasonably foreseeable existing and future water supplies would likely have been adequate to meet regional water demands associated with growth and land use change by 2020. However, because of these drought-related cutbacks in water deliveries, new near-term water supplies or entitlements may be required to meet 2020 water demands; near-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, there would be a localized significant water supply impact in the Borrego Valley basin, because groundwater supplies would be insufficient, and new near-term water supplies or entitlements would be required to meet demands. Therefore, water supply impacts caused by regional growth and land use change are significant in 2020.

Transportation Network Improvements and Programs

Water would be used on a short-term basis for activities such as the production of concrete and dust suppression during construction of various transportation network improvements including, but not limited to, transit capital improvements such as concrete ties and station platforms for LOSSAN corridor double tracking or the Midcoast Trolley extension, new managed lanes, new freeway general purpose lanes, active transportation network improvements. Construction would not require a large amount of water in comparison to the existing supply, and would only be required for the duration of construction. Operation of the transportation network improvements would also use of water. In some locations recycled water would be used to provide irrigation for landscaping alongside transportation network improvements.

Although Caltrans (2014b) states that “cost effective and appropriate water conservation strategies are employed in the design, construction, operation and maintenance of transportation facilities including, to the maximum extent practicable, the use of recycled water and state of the art irrigation technology for highway landscaping,” there would still be demand for water associated with the construction and operation of transportation network improvements built by Caltrans or other project sponsors.

Prior to the most recent MWD and planned SDCWA cutbacks in water deliveries due to the drought, reasonably foreseeable existing and future water supplies would likely have been adequate to meet regional water demands associated with transportation network improvements by 2020.
However, because of these drought-related cutbacks in water deliveries, new near-term water supplies or entitlements may be required to meet 2020 water demands; near-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Therefore, water supply impacts caused by transportation network improvements are significant in 2020.

2020 Conclusion

The increased demands from forecasted regional growth and land use change and transportation network improvements would not be adequately served by existing and future water supplies; new near-term water supplies or entitlements may be required to meet 2020 water demands; near-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, forecasted regional growth and land use change in the Borrego Valley would result in a localized significant impact because demands on existing water supplies from the Borrego Valley aquifer would be inadequate to serve future demands. Therefore, this impact (WS-1) is significant in 2020.

2035

Regional Growth and Land Use Change

SDCWA Service Area

The SDCWA service area population is forecast to reach 3,906,718 people by 2035 (SDCWA 2010). In 2010, water demand within the SDCWA service area was 566,443 AF. The anticipated baseline demand for a normal water year in 2035 including conservation efforts and SBX7-7 compliance demand forecast is 785,685 AF.

Single dry-year demand estimates in 2035 are forecast to be 839,016 AF with SBX7-7 implementation, and multiple dry-year demand forecasts are 882,795 AF in 2033 (SDCWA 2010). Total projected supplies for a normal water year, including SDCWA and member agency supplies, are forecast to be 785,685 AF in 2035 and 839,016 AF in a single dry year. Under multi-dry-year analysis, potential shortages could be experienced in 2028, 2032, and 2033, due to increasing water demands due to growth throughout the region (SDCWA 2010). Prolonged droughts would make these shortages worse.

If MWD, SDCWA, and member agency supplies are developed as planned, along with achievement of the SBX7-7 retail conservation target, the UWMP anticipated that no shortages within SDCWA’s service area in a normal water year and single dry water year through 2035 (SDCWA 2010).

SDCWA Master Plan Update

As stated above, the focus of the 2013 Master Plan Update is to optimize existing infrastructure and maintain the flexibility to adjust to a range of future regional planning outcomes through 2035, and the current aqueduct system is fully capable of meeting regional demands through the mid-2020s. However, beyond the mid-2020s, there is limited operational flexibility to meet peak demands for untreated water supplies. Under normal and wet weather patterns, the Master Plan Update anticipated a very low occurrence of supply-demand gaps through 2035. During multiple dry-year weather patterns, when imported supplies are assumed to be restricted to MWD preferential rights, supply-demands gaps will likely occur (SDCWA 2013a).

3 Forecasted 2035 population was revised downward to 3,853,698 (53,020 fewer people, or about 1 percent lower) in the Series 13 Regional Growth Forecast, upon which the proposed Plan is based.
According to the 2013 Master Plan Update, under planning scenarios that place a higher reliance on the SDCWA aqueduct system to meet regional demands, supply-demand gaps are more likely to occur beginning in 2025. Under these scenarios, additional supply development would be needed before the end of the 2035 planning horizon. The frequency and magnitude of supply-demand gaps under all planning scenarios are strongly influenced by member agency achievement of local supply development and conservation saving goals. Additional local supply development, such as the City of San Diego’s proposed DPR/IPR project and the Otay Water District’s Rosarito Beach seawater desalination project, would essentially alleviate supply-demand gaps that occur near the end of the planning horizon (SDCWA 2013a).

The Master Plan Update includes recommendations for near-term (out to 2025) and long-term (beyond 2025) projects to be considered for implementation to alleviate constraints or supply shortages or to ensure completion of system improvements included in the existing CIP. The environmental impacts of the near-term and long-term projects would be similar to those described in Impact WS-2.

Implementation of the near-term projects would reduce SDCWA’s potential conveyance constraints and supply shortages. Although there is always uncertainty regarding water supply due to uncontrollable events such as prolonged drought or natural disaster, implementation of the near-term projects would result in significant reductions in vulnerabilities to SDCWA’s system related to conveyance constraints and supply shortages (SDCWA 2013a). The Master Plan Update recommended that the following near-term projects be approved for further evaluation:

- **Pipeline 3/Pipeline 4 Conversion (New Project):** This project will alleviate the potential untreated water conveyance constraint at the MWD Delivery Point. The project will increase untreated water conveyance capacity in the Second Aqueduct north of Twin Oaks Valley by converting an existing segment of Pipeline 4 to untreated water service and converting an existing parallel segment of Pipeline 3 to treated water service. Total untreated water delivery capacity would increase by 190 cfs. Coordination with MWD is required to determine new infrastructure requirements outside the SDCWA service area that will facilitate the conversion of Pipelines 3 and 4.

- **North County ESP Pump Station (Existing Project):** This project consists of a new 30 cfs pump station to deliver treated water to the northern reaches of the SDCWA service area when supplies from MWD are interrupted. Project location and pumping capacity are dependent on implementation of the Pipeline 3/Pipeline 4 Conversion project.

- **Mission Trails Projects (Existing Project):** This project will alleviate the existing untreated water conveyance constraint south of Lake Murray. The project provides regulatory storage for improved aqueduct operations and increases untreated water conveyance capacity for deliveries to south county WTPs. The project includes a new storage facility sized up to 12 MG, flow control valve structure, and connections to the completed Mission Trails Tunnel project. An alternative to this project would be constructing a new interconnection or placing the existing Flow Balancing Structure back in service, both of which would only address the conveyance constraint south of Lake Murray.

- **ESP San Vicente 3rd Pump and Power Supply (Existing Project):** This project provides station upgrades and a new power supply to allow operation of the existing pump station at full design capacity. The project is needed to fully utilize an expanded San Vicente Reservoir for emergency storage operation and provide operational flexibility to deliver additional supply from the
reservoir to meet peak seasonal demands. New power supply options include a new 12 kV overhead circuit or on-site power generation using diesel- or natural gas-powered generator sets.

- **System Isolation Valves (New Project):** This project allows for more efficient isolation of segments of the aqueduct system to perform required inspections, maintenance, and repair work and isolates segments of the aqueduct system during low flow periods to address potential water quality concerns. High-risk areas generally include river and stream crossings, lake crossings, and other areas where damage may result from a seismic or flood event.

- **System Storage (Existing Project):** This project provides new regulatory storage to manage daily flow changes and unanticipated flow interruptions. The project includes two possible locations: at the Twin Oaks Diversion Structure (sized 10 to 20 million gallons) and at the First Aqueduct/Valley Center Pipeline connection (sized 2 to 3 million gallons).

- **Facility Planning Studies (New Project):** This project includes new planning-level studies that would evaluate infrastructure requirements related to the assessment of water quality concerns and nitrification in the treated water system, system vulnerabilities at river and stream crossings resulting from flood and seismic events, and the evaluation of new in-line hydroelectric generation opportunities.

The long-term projects include improvements that are to be considered for implementation beyond the 2025 timeframe. These projects will significantly alleviate projected conveyance constraints or supply shortages that may occur towards the end of or beyond the 2013 Master Plan Update planning horizon. Given the long-term implementation needs, no specific action is recommended to proceed with immediate development of the long-term projects. Instead, the recommendations provide a course of action that allows for further evaluation of project feasibility and cost while monitoring various local and statewide water resource decisions that will affect local supply development and imported water supply reliability. As these local and statewide water resource decisions unfold, appropriate incremental actions regarding the long-term projects may be taken by the Water Authority.

- **Camp Pendleton Desalination Project (Supply from the West):** This project will provide a new water supply of up to 150 mgd and involves construction of a seawater desalination plant on MCB Camp Pendleton property, intake and discharge facilities connected to the plant, and the associated pipeline and pumping facilities that would convey the product water to the Second Aqueduct. Two sites within the MCB Camp Pendleton property have been approved for further evaluation.

- **Colorado River Conveyance Facility (Conveyance from the East):** This project would provide a new conveyance facility to transport QSA supplies from the westerly terminus of the AAC directly to the San Vicente Reservoir. Depending on the alignment selected, facilities would include a combination of pipelines, tunnels, pump stations, forebays, power-generating facilities, pressure control facilities, transmission lines, and substations.

- **Pipeline 6 (Conveyance from the North):** This existing CIP project includes construction of a new conveyance facility that would provide up to 500 cfs of new untreated water delivery capacity. The project limits extend from the MWD delivery point to Twin Oaks Valley. Project alignment studies were complete jointly with MWD.

- **Second Crossover Pipeline (Existing Project):** This project alleviates a potential untreated water conveyance constraint south of Twin Oaks that serves east county WTPs connected to the First Aqueduct.
• Enhancement of Storage Portfolio: This 2013 Master Plan found that additional investments in conveyance capacity would need to be made to derive more benefits from increased regional storage. The value of storage will not diminish over time, and the additional benefits may be derived from future investments in the regional conveyance system.

Borrego Valley Aquifer

As described above in the 2020 analysis and in Section 4.16.1, the Borrego Valley Aquifer has not been adjudicated; therefore, individual well users are not regulated in the amount of groundwater they can extract, and future availability of supplies is uncertain. All BWD water comes from groundwater. The BWD would experience growth under implementation of the proposed Plan, thereby increasing the demand for potable water. Under the proposed Plan, by 2035, 392 additional residential units would be developed in the Borrego Valley over 2020 conditions, continuing to exacerbate the overdraft condition (SRA Forecast 2015). Existing groundwater impacts already occurring would continue to worsen as groundwater usage increases due to increased growth. Current impacts include dry wells, decreased well efficiency, and increased pumping costs as water levels continue to decline. Under the proposed Plan, these impacts would continue and more wells would need to be replaced as water levels drop. Possible non-local water supply opportunities and projects, and their possible impacts, are described above in the 2020 analysis.

Conclusion

The increased demands from forecasted regional growth and land use change would not be adequately served by existing and future water supplies; new near-term (prior to 2025) and long-term (after 2025) water supplies or entitlements may be required to meet 2035 water demands; near-term and long-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, forecasted regional growth and land use change in the Borrego Valley would result in a localized significant impact because demands on existing water supplies from the Borrego Valley aquifer would be inadequate to serve future demands. Therefore, water supply impacts caused by regional growth and land use change are significant in 2035.

Transportation Network Improvements and Programs

Many improvements by 2035 would be in transportation corridors where landscaping already requires irrigation. There would still be some demand for water associated with the construction and operation of transportation network improvements. Construction of transportation network improvements would require the use of water on a short-term basis for activities such as the production of concrete and for dust suppression during construction. Construction would not require a large amount of water in comparison to the existing supply, and would only be required for the duration of construction. Operation of the transportation network improvements would also use recycled water. In some locations recycled water would be used to provide irrigation for landscaping alongside transportation network improvements.

Reasonably foreseeable existing and future regional water supplies would not be adequate to meet regional water demands by 2035, including water demands for construction and operation of transportation network improvements. Therefore, water supply impacts caused by transportation network improvements would be significant in 2035.

2035 Conclusion
The increased demands from forecasted regional growth and land use change and transportation network improvements would not be adequately served by existing and future water supplies; new near-term and long-term water supplies or entitlements may be required to meet 2035 water demands; near-term and long-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, forecasted regional growth and land use change in the Borrego Valley would result in a localized significant impact because demands on existing water supplies from the Borrego Valley aquifer would be inadequate to serve future demands. Therefore, this impact (WS-1) in the year 2035 is significant.

2050

**Regional Growth and Land Use Change**

**SDCWA Service Area**

Some uncertainty exists for long-term water supplies in the San Diego region and California. Additionally, uncertainties exist in the availability of Colorado River water due to the recent long-term drought. The region is a major urban area, importing water from hundreds of miles away, and given the various uncertainties with long-term planning, regional water supplies could be challenged by climate change and other factors, and the demand for local water supplies may increase (desalination, water recycling). Additional long-term supply uncertainties are described in the 2010 UWMP.

The planning horizon for the 2010 UWMP and 2013 Master Plan Update is 2035, 15 years short of the planning horizon for the proposed Plan. As described in Chapter 2, the Series 13 growth forecast forecasts population growth of 215,061 between 2035 and 2050, for a 2050 population of 4,068,759. Water demand in 2050 was estimated using the 2010 UMWP assumptions for population and water demand in 2035 for normal year, single dry year, and multiple dry years. These assumptions were used to develop per capita rates for each scenario (i.e., AF per person during normal year, single dry year, multiple dry years). These per capita rates were then applied to forecasted 2050 population under the proposed Plan calculate the following 2050 water demands under the proposed Plan: 817,821 AF for normal year, 874,783 AF for single dry year, and 919,540 for multiple dry years.

**SDCWA Master Plan Update**

As stated above, the Master Plan Update includes recommendations for near-term (prior to 2025) and long-term (beyond 2025) projects to be considered for implementation to alleviate constraints or supply shortages or to ensure completion of system improvements included in the existing CIP. Implementation of the near-term projects would reduce SDCWA’s potential conveyance constraints and supply shortages. Although there is always uncertainty regarding water supply due to uncontrollable events such as prolonged drought or natural disaster, implementation of the near-term projects would result in significant reductions in vulnerabilities to SDCWA’s system related to conveyance constraints and supply shortages (SDCWA 2013a). Recommended near-term and long-term projects are listed above in the 2035 analysis.

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4 The 2010 UWMP assumed a 2035 population of 3,906,718 people; normal year water demand of 785,685 AF; single dry year water demand of 839,016 AF; and multiple dry year water demand of 882,795 AF. Dividing the population by water demand yields the following 2035 per capita rates: 0.201 AF/person in a normal year, 0.215 AF/person in a single dry year, 0.226 AF/person in multiple dry years.
Recommendations for long-term projects include projects that would significantly alleviate projected horizon of the 2013 Master Plan Update. Long term projects include expansion of local supply through building of desalination plants and the enhancement of the storage portfolio (SDCWA 2013a). Additional long-term projects discussed in the Master Plan Update include a Colorado River Conveyance Facility (Conveyance from the East) and Pipeline 6 (Conveyance from the North), and the Second Crossover Pipeline. Further analysis of these projects’ feasibility was not recommended due to financial and budgetary constraints and legal matters (SDCWA 2013a). The Master Plan Update notes that the projects should be considered with the next update of the Master Plan.

The environmental impacts of these types of projects have similarities and are therefore summarized in Table 4.16-5, under Impact WS-2. Both construction- and operation-related environmental impacts associated with alternative water sources would be determined by future environmental analysis on a project-by-project basis, and appropriate mitigation measures would also be identified to reduce any significant environmental impacts at the time the project is proposed.

**Borrego Valley Aquifer**

As described above in the 2020 and 2035 analyses, the Borrego Valley Aquifer has not been adjudicated; therefore, individual well users are not regulated in the amount of groundwater they can extract, and future availability of supplies is uncertain. All BWD water comes from groundwater. The BWD would experience growth under implementation of the proposed Plan, thereby increasing the demand for potable water.

Under the proposed Plan, by 2050, 998 additional residential units would be developed in the Borrego Valley over 2035 conditions, continuing to exacerbate the overdraft condition (SRA Forecast 2015). Existing groundwater impacts already occurring would continue to worsen as groundwater usage increases due to increased growth. Current impacts include dry wells, decreased well efficiency, and increased pumping costs as water levels continue to decline. Under the proposed Plan, these impacts would continue and more wells would need to be replaced as water levels drop. Possible non-local water supply opportunities and projects to supplement the Borrego Valley’s water supply are described above in the 2020 and 2035 analyses.

**Conclusion**

The increased demands from forecasted regional growth and land use change would not be adequately served by existing and future water supplies; new near-term (prior to 2025) and long-term (after 2025) water supplies or entitlements may be required to meet 2050 water demands; near-term and long-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, forecasted regional growth and land use change in the Borrego Valley would result in a localized significant impact because demands on existing water supplies from the Borrego Valley aquifer would be inadequate to serve future demands. Therefore, water supply impacts caused by regional growth and land use change are significant in 2050.

**Transportation Network Improvements and Programs**

Water demand associated with 2050 transportation network improvements and programs would be similar to the construction and operational water uses described in the 2020 and 2035 analyses. However, as mentioned above, the availability of long-term reliable water supplies in 2050 is uncertain.
Reasonably foreseeable existing and future regional water supplies would not be adequate to meet regional water demands by 2050, including water demands for construction and operation of transportation network improvements. Therefore, water supply impacts caused by transportation network improvements would be significant in 2050.

2050 Conclusion

The increased demands from forecasted regional growth and land use change and transportation network improvements would not be adequately served by existing and future water supplies; new near-term and long-term water supplies or entitlements may be required to meet 2050 water demands; near-term and long-term SWDCA Master Plan Update projects are described in the impact analysis for 2035. Also, forecasted regional growth and land use change in the Borrego Valley would result in a localized significant impact because demands on existing water supplies from the Borrego Valley aquifer would be inadequate to serve future demands. Therefore, this impact (WS-1) in the year 2050 is significant.

MITIGATION MEASURES

WS-1 Water Supply and Demand

2020, 2035, and 2050

WS-1A Implement Water Conservation Measures. SANDAG shall, and other transportation project sponsors can and should, implement feasible water conservation measures during planning, design and project-level CEQA review, construction, operations, and maintenance of transportation network improvements, including, but not limited to, the following:

- Comply with all prevailing state, regional, and local government plans, laws, and policies regarding water conservation and efficiency.
- Install drip or other water-conserving or weather-based irrigation systems for landscaping.
- Install native plant species and noninvasive drought-tolerant/low-water-use plants in landscaping, consistent with the most recent state, regional, and local government plans, laws, and policies.

In addition, the County of San Diego, cities, and other local jurisdictions can and should incorporate water conservation measures, including, but not limited to, those measures listed above, and measures and policies regarding water efficiency, conservation, capture, and reuse identified by water suppliers in state, regional, and local plans, laws, and policies, and in their own plans and ordinances, during planning, design, and project-level CEQA review of development projects.

WS-1B Use Reclaimed Water. SANDAG shall, and other transportation project sponsors can and should, incorporate use of reclaimed water (also known as recycled water) during planning, design, project-level CEQA review, construction, operations, and maintenance of transportation network improvements to reduce the use of potable water.

The County of San Diego, cities, and other local jurisdictions can and should incorporate use of reclaimed water as a measure during planning, design, and project-level CEQA review of development projects, including, but not limited to, the following:
• On-site water recycling.
• Recycled water to fill lakes, ponds, and ornamental fountains; for irrigation; and to mix concrete and control dust at construction sites.
• Recycled water for certain industrial processes and for flushing toilets and urinals in nonresidential buildings.
• Recycled water for street sweeping purposes.

WS-1C Ensure Adequate Water Supply. During planning, design, and project-level CEQA review for development projects, the County of San Diego, cities, and other local jurisdictions can and should ensure that adequate water supply will be available to meet or satisfy projected water demands, consistent with applicable UWMPs, Master Plans, and General Plan projections of water supply and demand. This can and should be documented in the form of an SB 610 Water Supply Assessment, an SB 221 Water Supply Verification, or other capacity analysis.

SIGNIFICANCE AFTER MITIGATION

2020, 2035, and 2050

Regional and localized water supply impacts in the Borrego Valley would be significant in 2020, 2035, and 2050. Mitigation measures WS-1A, WS-1B, and WS-1C would not reduce this impact to a less than significant level because they would not assure that regional water supplies would be available to meet regional water demands needs in 2020, 2035, and 2050. Therefore, this impact (WS-1) remains significant and unavoidable.

WS-2 REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW WATER FACILITIES OR THE EXPANSION OF EXISTING FACILITIES TO ADEQUATELY MEET FORECAST DEMAND OR CAPACITY NEEDS, THE CONSTRUCTION OF WHICH COULD CAUSE A SIGNIFICANT ENVIRONMENTAL EFFECT.

ANALYSIS METHODOLOGY

This analysis provides information on the adequacy of existing water facilities to serve forecasted regional growth and land use change and proposed transportation network improvements. “Water facilities” are defined to include conveyance (of raw water), storage, treatment, and distribution facilities. Major water conveyance systems serving the region include the California Aqueduct and Colorado River Aqueduct, and the system includes other conveyance pipelines and associated infrastructure. System regulatory storage improves aqueduct system operations by providing storage reservoirs located at strategic points throughout the system that buffer the constant adjustments and enhance the ability to manage daily aqueduct operations. System regulatory storage allows for a constant delivery to the member agencies when pumps are stopped or started, and prevents spilling of water if a member agency suddenly rejects flow due to changes within the member agency system (SDCWA 2013a).

SDCWA’s in-region storage includes the Olivenhain Reservoir, the San Vicente Reservoir, and Lake Hodges. In addition, SDCWA has contracted for out-of-region groundwater storage. Water treatment for almost all retail water service is provided by a member agency WTP, Twin Oaks Valley WTP, or by MWD’s Skinner WTP. This regional treated-water capacity provides flexible and robust local water treatment options and supports member agencies’ constructed facilities. Water demands associated with the proposed Plan regional growth and land use change and transportation network improvements are discussed and then compared to the existing capacity of water facilities.
The types of potential short-term and long-term physical impacts of constructing and operating such facilities are described. No project-specific analysis of constructing or expanding any facilities is provided.

**IMPACT ANALYSIS**

**2020**

**Regional Growth and Land Use Change**

As noted above, in 2010 the water demand was 566,443 AF and the forecast demand for 2020 is 675,089 AF, an increase of 108,646 AF. New facilities and expansion of existing water facilities will be needed to serve 2020 growth, and to serve alternative water supply projects, if required, but details on the size, location, and characteristics of those facilities are not known and would be addressed in project specific documents. The near-term projects recommended by the 2013 Master Plan Update for further evaluation are described above in WS-1. Near-term projects specific to the 2020 planning horizon are noted below. The potentially significant construction-related environmental impacts of these facilities, and potential mitigation measures, are summarized in Table 4.16-5. This table specifically addresses the impacts for future water supply projects and alternative water supply projects.

<table>
<thead>
<tr>
<th>Environmental Issue Area</th>
<th>Potential Impact</th>
<th>Possible Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetic and Visual Resources</td>
<td>Construction activities may alter scenic views. Addition of new visual features may block views and cause additional sources of light and glare.</td>
<td>Protect public views of scenic vistas during all project stages. Design projects to reduce impacts to scenic resources within scenic highways. Design projects to reduce light and glare with project-specific design features.</td>
</tr>
<tr>
<td>Air Quality</td>
<td>The following may occur: temporary construction air quality impacts; emission of toxic air contaminants; and conflict with local Air Quality Management Plan.</td>
<td>Comply with all applicable federal, state, and local air quality guidelines.</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>Construction and operation activities may impact terrestrial and aquatic biological resources.</td>
<td>Compliance with all federal, state, and local laws and guidelines to ensure protection of biological resources in all stages of the project.</td>
</tr>
</tbody>
</table>

5 For additional detail, see SDCWA (2013a, 2013c)
<table>
<thead>
<tr>
<th>Environmental Issue Area</th>
<th>Potential Impact</th>
<th>Possible Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural and Paleontological Resources</td>
<td>Construction and operation activities may potentially disturb undiscovered archaeological and paleontological resources.</td>
<td>Conduct pre-construction surveys, records searches, studies, and Native American consultations. Identify the potential for unique paleontological resources or unique geologic features. Develop project-level measures to avoid or reduce impacts to cultural resources, paleontological resources, and unique geologic features. Protect historic resources during construction.</td>
</tr>
<tr>
<td>Geology, Soils, and Mineral Resources</td>
<td>The following may occur: seismic-related hazards including earthquakes; and geologic-related hazards including landslides and liquefaction, soil and topsoil erosion, and water and wind erosion.</td>
<td>Project-specific geotechnical studies would be prepared. Compliance with the recommendations in site-specific studies would be a condition of the site development permit for specific projects.</td>
</tr>
<tr>
<td>Greenhouse Gas (GHG) Emissions</td>
<td>Project may increase the emission of GHGs.</td>
<td>Compliance with all state and local regulations to reduce GHG emissions.</td>
</tr>
<tr>
<td>Hazards and Hazardous Materials</td>
<td>Project may create hazards due to the storage, transportation, and/or handling of hazardous materials, thereby increasing the risk of exposure to hazards and hazardous materials.</td>
<td>All hazardous materials would be handled, stored, transported, and disposed of in accordance with all applicable federal, state, and local regulations. Measures would be implemented to ensure emergency response services are adequate and can meet service levels. Bank stabilization and other wildland fire risk reduction measures would be implemented.</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td>Stormwater runoff and flooding may occur. Some projects may result in increased surface water diversions.</td>
<td>Compliance with all applicable regulations and detailed erosion control measures tailored to the specific project site. Measures to manage stormwater runoff and erosion including directing runoff to permitted system with capacity.</td>
</tr>
<tr>
<td>Noise</td>
<td>Construction and operation may cause impacts to nearby sensitive receptors.</td>
<td>Compliance with noise standards in the specific project jurisdiction, and preparation of a Noise Study.</td>
</tr>
<tr>
<td>Public Services and Utilities</td>
<td>Increased solid waste production may occur.</td>
<td>Compliance with all applicable regulations and Assembly Bill 939. Reduce water use for construction and operations. Implement green building measures. Reduce construction waste through reuse or recycling of materials.</td>
</tr>
<tr>
<td>Traffic</td>
<td>Short-term project construction could potentially impact traffic.</td>
<td>A Traffic Control Plan for specific projects to ensure safety in construction zones.</td>
</tr>
</tbody>
</table>
4.16 Water Supply

WTP utilization is measured as the annual average flow through each plant as a fraction of the total plant maximum capacity, indicating where additional treatment capacity may be needed or where a plant is underutilized, or where a load might be shifted (SDCWA 2013a). As discussed in the SDCWA 2013 Master Plan Update, most of the region’s plants are operating with an average use of slightly greater than half of their capacity. Under either Master Plan Update planning scenario, the Badger, Alvarado, and Perdue WTPs all operate at approximately half of their capacity. Twin Oaks Valley, Olivenhain, Levy, Miramar, and Otay WTPs all continue to operate at just above half of their capacity, and Weese and Escondido WTPs operate at between 70 and 80 percent of their capacity depending on the planning scenario, indicating that sufficient capacity is available to serve forecasted growth through 2020 (SDCWA 2013a).

Conveyance utilization is measured as the number of days during the peak season (June through November) in which 95 percent or more of the conveyance capacity of a particular reach of the aqueduct system is used. Delivery or conveyance reliability is a measurement of the frequency and magnitude of regional supply shortages that may occur as a result of insufficient supply, extreme dry-weather demands, or constraints in the aqueduct system. As described above, under normal and wet weather patterns, there is a very low occurrence of supply-demand gaps through 2035. During multiple dry-year weather patterns, when imported supplies are assumed to be restricted to MWD preferential rights, supply-demand gaps will likely occur. As discussed in the above analysis, even under planning scenarios that place a higher reliance on the SDCWA aqueduct system to meet regional demands, supply-demand gaps are not likely to occur by 2020.

System storage is used to mitigate peak demands on SDCWA’s aqueduct system. Efficient use of system storage prevents peak flow delivery constraints, optimizes system operations, and ensures timely implementation of system improvements. The use of existing SDCWA-owned storage to provide a seasonal storage pool is required to alleviate peak untreated delivery conveyance constraints. On average, seasonal storage use will vary between 40 and 50 thousand acre feet (TAF). While an increase in regional storage (through development of new storage or coordinated operation of existing storage facilities) would further alleviate multi-year dry-weather impacts, additional imported water conveyance capacity would be required to fully optimize reservoir filling and drawdown needs (SDCWA 2013a).

Additionally, completion of the remaining CIP projects in SDCWA’s fiscal year 2015 budget will ensure operational reliability. Delivery reliability is predicated on continued functionality of all components of the existing aqueduct system through 2020 (SDCWA 2013a).

According to the 2013 Master Plan Update, implementation of near-term projects (out to 2025), also described above, would result in significant reductions in weaknesses related to conveyance constraints and supply shortages, and the use of existing storage to meet delivery requirements would further alleviate these constraints. While the elimination of all system weaknesses is not possible, as water delivery can be affected by uncontrollable events, monitoring metrics and performance thresholds would help ensure the latest trends and demographics are considered (SDCWA 2013a). Implementation of the near-term projects would reduce SDCWA’s potential conveyance constraints and supply shortages. The near-term projects with an anticipated implementation timeframe of 2015-2020 include (SDCWA 2013a):
• North County ESP Pump Station (Existing Project): This project consists of a new 30 cfs pump station to deliver treated water to the northern reaches of the SDCWA service area when supplies from MWD are interrupted. Project location and pumping capacity are dependent on implementation of the Pipeline 3/Pipeline 4 Conversion project.

• Mission Trails Projects (Existing Project): This project will alleviate the existing untreated water conveyance constraint south of Lake Murray. The project provides regulatory storage for improved aqueduct operations and increases untreated water conveyance capacity for deliveries to south county WTPs. The project includes a new storage facility sized up to 12 MG, flow control valve structure, and connections to the completed Mission Trails Tunnel project. An alternative to this project would be constructing a new interconnection or placing the existing Flow Balancing Structure back in service, both which would only address the conveyance constraint south of Lake Murray.

• System Isolation Valves (New Project): This project allows for more efficient isolation of segments of the aqueduct system to perform required inspections, maintenance, and repair work and isolates segments of the aqueduct system during low flow periods to address potential water quality concerns. High-risk areas generally include river and stream crossings, lake crossings, and other areas where damage may result from a seismic or flood event.

• Facility Planning Studies (New Project): This project includes new planning-level studies that would evaluate infrastructure requirements related to the assessment of water quality concerns and nitrification in the treated water system, system vulnerabilities at river and stream crossings resulting from flood and seismic events, and the evaluation of new in-line hydroelectric generation opportunities.

Construction of new or expanded water facilities would result in short-term construction-related impacts. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and BMPs. Additionally, operation of new facilities may lead to long-term environmental impacts related to air quality, noise, traffic, and more. Because details about the timing, location, and project-specific information for new water facilities are not known, there is no assurance the impacts from the construction or operation of new or expanded water facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements and Programs

Transportation network improvements and programs are developed to accommodate the projected growth and increases in population, housing, and employment, as discussed above. New treatment and storage facilities would not be required to provide water for irrigated landscaping on proposed Plan transportation projects, because the water demands of these projects are relatively minor.

In some locations, new distribution pipelines would be needed to extend recycled water service to new projects where such service is not available, and their construction and operation would cause the types of environmental impacts listed in Table 4.16-5. Therefore, implementation of the proposed Plan transportation network improvements and programs would result in a significant impact related to construction of new distribution facilities in 2020.
2020 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs would result in construction of new or expanded water facilities. Impacts of constructing some of these facilities would be significant. Therefore, this impact (WS-2) in the year 2020 is significant.

2035

Regional Growth and Land Use Change

As noted above, the forecasted water demand in 2020 is 675,089 AF and the forecast demand for 2035 is 785,685 AF, an increase of 110,596 AF. As stated in the 2020 analysis, construction of new or expanded water facilities to serve the growth would result in short-term construction-related impacts. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and BMPs. Operation of new facilities may lead to long-term environmental impacts related to air quality, noise, traffic, and more. Because details about the timing, location, and project-specific information for new water facilities are not known, there is no assurance the impacts from the construction of new or expanded water facilities will always be less than significant. Therefore, this impact is significant.

As discussed in the SDCWA 2013 Master Plan Update, most of the region’s WTP plants are operating with an average use of slightly greater than half of their capacity. Under either Master Plan Update planning scenario, the Badger, Alvarado, and Perdue WTPs all operate at approximately half of their capacity. Twin Oaks Valley, Olivenhain, Levy, Miramar, and Otay WTPs all continue to operate at just above half of their capacity, and Weese and Escondido WTPs operate at between 70 and 80 percent of their capacity depending on the planning scenario, indicating that sufficient capacity is available to serve forecasted growth through 2035 (SDCWA 2013a).

Conveyance utilization is measured as the number of days during the peak season (June through November) in which 95 percent or more of the conveyance capacity of a particular reach of the aqueduct system is used. Delivery or conveyance reliability is a measurement of the frequency and magnitude of regional supply shortages that may occur as a result of insufficient supply, extreme dry-weather demands, or constraints in the aqueduct system. As described above, under normal and wet weather patterns, there is a very low occurrence of supply-demand gaps through 2035. During multiple dry-year weather patterns, when imported supplies are assumed to be restricted to MWD preferential rights, supply-demand gaps will likely occur. As discussed in the above analysis, under planning scenarios that place a higher reliance on the SDCWA aqueduct system to meet regional demands, supply-demand gaps are more likely to occur beginning in 2025. Under these scenarios, additional supply development would be needed before the end of the 2035 planning horizon.

System storage is used to mitigate peak demands on SDCWA’s aqueduct system. Efficient use of system storage prevents peak flow delivery constraints, optimizes system operations, and ensures timely implementation of system improvements. The use of existing SDCWA-owned storage to provide a seasonal storage pool is required to alleviate peak untreated delivery conveyance constraints. On average, seasonal storage use will vary between 40 and 50 thousand acre feet (TAF). While an increase in regional storage (through development of new storage or coordinated operation of existing storage facilities) would further alleviate multi-year dry-weather impacts, additional imported water conveyance capacity would be required to fully optimize reservoir filling and drawdown needs through 2035 (SDCWA 2013a).
Additionally, completion of the remaining CIP projects in SDCWA’s fiscal year 2015 budget will ensure operational reliability. Delivery reliability is predicated on continued functionality of all components of the existing aqueduct system through the 2035 planning period and beyond (SDCWA 2013a).

According to the 2013 Master Plan Update, implementation of near-term projects (out to 2025) would result in significant reductions in weaknesses related to conveyance constraints and supply shortages, and the use of existing storage to meet delivery requirements would further alleviate these constraints. While the elimination of all system weaknesses is not possible, as water delivery can be affected by uncontrollable events, monitoring metrics and performance thresholds would help ensure the latest trends and demographics are considered (SDCWA 2013a). Implementation of the near-term projects would reduce SDCWA’s potential conveyance constraints and supply shortages. The near-term projects with an anticipated implementation timeframe between 2020 and 2035 include (SDCWA 2013a):

- Pipeline 3/Pipeline 4 Conversion (New Project): This project will alleviate the potential untreated water conveyance constraint at the MWD Delivery Point. The project will increase untreated water conveyance capacity in the Second Aqueduct north of Twin Oaks Valley by converting an existing segment of Pipeline 4 to untreated water service and converting an existing parallel segment of Pipeline 3 to treated water service. Total untreated water delivery capacity would increase by 190 cfs. Coordination with MWD is required to determine new infrastructure requirements outside SDCWA service area that will facilitate the conversion of Pipelines 3 and 4.

- ESP San Vicente 3rd Pump and Power Supply (Existing Project): This project provides station upgrades and a new power supply to allow operation of the existing pump station at full design capacity. The project is needed to fully utilize an expanded San Vicente Reservoir for emergency storage operation and provide operational flexibility to deliver additional supply from the reservoir to meet peak seasonal demands. New power supply options include a new 12 kV overhead circuit or on-site power generation using diesel- or natural gas-powered generator sets.

- System Storage (Existing Project): This project provides new regulatory storage to manage daily flow changes and unanticipated flow interruptions. The project includes two possible locations: at the Twin Oaks Diversion Structure (sized 10 to 20 million gallons) and at the First Aqueduct/Valley Center Pipeline connection (sized 2 to 3 million gallons).

Long-term project recommendations in the 2013 Master Plan Update include improvements that are to be considered for implementation beyond the 2025 timeframe. The long-term recommendations are described in Impact WS-1. The potentially significant construction-related environmental impacts of the near-term and long-term facilities, and potential mitigation measures, are summarized in Table 4.16-5. This table specifically addresses the impacts for future water supply projects and alternative water supply projects.

Because details about the timing, location, and project-specific information are not known, there is no assurance the impacts from the construction or operation of new or expanded water facilities will always be less than significant. Therefore, this impact is significant.

**Transportation Network Improvements and Programs**

Transportation network improvements and programs are developed to accommodate the projected growth and increases in population, housing, and employment, as discussed above in the 2020 analysis. New treatment and storage facilities would not be required to provide water for irrigated landscaping on proposed Plan transportation projects, because the water demands of these projects are relatively minor.
In some locations, new distribution pipelines would be needed to extend recycled water service to new projects where such service is not available, and their construction and operation would cause the types of environmental impacts listed in Table 4.16-5. Therefore, implementation of the proposed Plan transportation network improvements and programs would result in a significant impact related to construction of new water distribution facilities in 2020.

**2035 Conclusion**

Implementation of regional growth and land use change and transportation network improvements and programs would result in construction of new or expanded water facilities. Impacts of constructing some of these facilities would be significant. Therefore, this impact (WS-2) in the year 2035 is significant.

**2050**

**Regional Growth and Land Use Change**

As noted above, the forecasted normal year water demand in 2035 is 785,685 AF and the estimated normal year demand for 2050 is 817,821 AF, an increase of 32,136 AF. As stated in the 2020 and 2035 analysis, construction of new or expanded water facilities would result in short-term construction-related impacts. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and best management practices, and, as stated in WS-1, no shortages are anticipated within the SDCWA’s service area in a normal water year and single dry water year through 2035 (SDCWA 2010), but some uncertainty exists for long-term water supplies and facilities in the region. As described in the project description, by 2050 population, housing, and employment would continue to increase over 2012 conditions. Regional population, housing, and employment densities for 2050 are shown in Figures 2.0-8 through 2.0-10, and described further in Chapter 2 of this document. Operation of new facilities may lead to long-term environmental impacts related to air quality, noise, traffic, and more. Because details about the timing, location, and project-specific information for new water facilities are not known, there is no assurance the impacts from the construction of new or expanded water facilities will always be less than significant. Therefore, this impact is significant.

**Transportation Network Improvements and Programs**

By 2050, most of the transportation network improvements and programs associated with the proposed Plan would be in place and operational. The availability of water facilities to serve the increasing demand in 2050 is uncertain, and construction of new water facilities would cause the types of environmental impacts listed in Table 4.16-5. In addition, in some locations, new distribution pipelines would be needed to extend recycled water service to new projects where such service is not available, and their construction and operation would cause the types of environmental impacts listed in Table 4.16-5. Therefore, implementation of the proposed Plan transportation network improvements and programs would result in a significant impact related to construction of new water distribution facilities in 2020. Therefore, this is a significant impact.

**2050 Conclusion**

Implementation of regional growth and land use change and transportation network improvements and programs would result in construction of new or expanded water facilities. Impacts of constructing some of these facilities would be significant. Therefore, this impact (WS-2) in the year 2050 is significant.
MITIGATION MEASURES

WS-2  Impacts of New or Expanded Water Facilities

2020, 2035, and 2050

WS-2A  Mitigation Measures for New or Expanded Water Facilities. SDCWA, the County of San Diego, cities, and other local jurisdictions will be responsible for the construction of new water facilities, or the expansion of existing facilities, to adequately meet forecasted capacity needs. Mitigation measures should be implemented by water management agencies directly responsible for the construction of new or expanded water facilities. During the planning, design, and project-level CEQA review process for individual water facilities, these agencies can and should adopt measures to avoid or reduce significant environmental impacts associated with the construction or operation of such facilities. Such measures should include those necessary to avoid or reduce significant impacts including, but not limited to, air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology, and water quality. Many of these measures are described at a program level of detail in the SDCWA Water Supply Master Plan Update EIR (SDCWA 2013c).

Mitigation Measures WS-1A, 1B, and 1C would also reduce this impact by reducing water demands, thereby reducing the need for new water facilities.

SIGNIFICANCE AFTER MITIGATION

2020, 2035, and 2050

Implementation of the proposed Plan would result in significant impacts associated with the construction or expansion of water facilities in 2020, 2035, and 2050. Mitigation measures WSA-1A, 1-B, and 1-C, and WS-2A, would reduce the impacts of project-specific construction or expansion of water facilities through reducing water demands, and through project-level planning, design, and CEQA mitigation measures. However, it cannot be guaranteed that all future project-level impacts can be mitigated to a less than significant level. Therefore, this impact (WS-2) would remain significant and unavoidable.
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