3.12 Public Utilities and Infrastructure

This section describes the conditions of public services and utilities in Carlsbad and identifies the related potential environmental impacts and development constraints upon implementation of the proposed General Plan. The information contained in this section is partly based on the Working Paper 3: Open Space and the Natural Environment; Access to Recreation and Active, Healthy Lifestyles prepared by Dyett & Bhatia and Dudek.

Environmental Setting

WATER

The information contained in this section is based on the Carlsbad Municipal Water District (CMWD) 2012 Water Master Plan,[1] the 2010 Urban Water Management Plan,[2] the 2012 Recycled Water Master Plan,[3] and the 2012 Sewer Master Plan.[4]

PHYSICAL SETTING

Water Supply

San Diego County imports approximately 90 percent of its water from Northern California and the Colorado River. This water is imported to San Diego County by the San Diego County Water Authority (SDCWA) and the Metropolitan Water District (MWD) of Southern California. SDCWA was formed in 1944 and became a member of MWD in 1946 to obtain Colorado River water for San Diego County.[5] SDCWA currently has 24 member

[1] CMWD (Carlsbad Municipal Water District). *2012 Water Master Plan*. Prepared by Atkins. San Diego, California: Atkins. November 2011.

[2] CMWD. *2010 Urban Water Management Plan*. Prepared by Brown and Caldwell. San Diego, California: Brown and Caldwell. June 2011.

[3] CWWD. *2012 Recycled Water Master Plan*. Prepared by Carollo Engineers and CH2MHILL. Pasadena, California: Carollo. January 12, 2012. http://www.carlsbadca.gov/services/utilities/Documents/RecycledWaterMasterPlanReportCh123.pdf.

[4] City of Carlsbad. *2012 Sewer Master Plan*. Prepared by Dudek. Encinitas, California: Dudek. April 2012.

[5] SDCWA (San Diego County Water Authority). "Member Agencies." Accessed September 18, 2013. http://www.sdcwa.org/member-agencies.

agencies, which include six cities, five water districts, three irrigation districts, eight municipal water districts, one public utility district, and one federal agency (a military base). Its service area encompasses approximately 1,438 square miles and a population of approximately three million people. SDCWA receives 90 percent of its imported water from the MWD. SDCWA is MWD's largest member agency, purchasing up to 30 percent of MWD's supplies annually. SDCWA member agencies in the vicinity of Carlsbad include the CMWD, Vallecitos Water District (VWD), and Olivenhain Municipal Water District (OMWD)—all three of which provide water service to the City of Carlsbad.

Carlsbad Municipal Water District

CMWD is a subsidiary district of the City of Carlsbad and delivers water and recycled water to its approximately 32-square-mile service area. About 82 percent of the city is served by CMWD. Water service to the southeast corner of the city is provided by OMWD. VWD provides service to the Meadowlark area along the eastern city limit.[6]

The facilities comprising the existing CMWD water distribution system include SDCWA turnouts, transmission mains, distribution pipelines, pressure reducing stations, storage reservoirs, pump stations, and inter-ties with adjacent water agencies. CMWD imports water through SDCWA for their potable water needs. Water is supplied to the CMWD through four separate SDCWA treated water turnouts. Two of the turnouts, SDCWA Connections No. 1 and No. 2, are direct connections to the SDCWA Second Aqueduct. Connection No. 1 supplies only CMWD and Connection No. 2 supplies VWD and OMWD in addition to CMWD. Water supply to CMWD from SDCWA Connection No. 2 is delivered through a VWD transmission main. Connections No. 3 and No. 4 to the aqueduct system are on the SDCWA-owned and operated Tri-Agency Pipeline (TAP), which is also supplied from the SDCWA Second Aqueduct. The TAP also serves the City of Oceanside and the Vista Irrigation District.[7]

It is the policy of CMWD that recycled water shall be used within the jurisdiction wherever its use is economically justified, financially and technically feasible, and consistent with legal requirements, preservation of public health, safety, and welfare, and the environment. This policy requires CMWD to prepare and adopt a Recycled Water Master Plan to define, encourage, and develop the use of recycled water, and to update this plan no less than every five years. The most recent Recycled Water Master Plan was published in November 2012. City policy, as established in 1990 and recently revised and approved by the CMWD Board, requires that recycled water be used on all new land use developments proposed in Carlsbad for all state-approved nonpotable uses, if and when available.

[6] CMWD, *2012 Water Master Plan.*

[7] *Ibid.*

Water Demand

A key factor influencing water use projections is projected growth in population, housing, and employment. Growth projections produced by the San Diego Association of Governments (SANDAG) indicate the CMWD service area will experience continued growth in each of these parameters, but at a lower rate than in previous decades, and diminishing further over the course of the forecast period. The SANDAG projections show a continued population growth in Carlsbad through 2050, with slowing housing, commercial and industrial development beyond 2035.

In conjunction with SANDAG data, the CMWD Water Master Plan also uses growth assumptions identified in the city's Local Facility Management Zones (LFMZ). Each LFMZ includes projected increases in the number of residential dwelling units and nonresidential square footage anticipated through buildout, which is assumed to be year 2033. The ultimate water demand used for the CMWD 2012 Water Master Plan is based on buildout at 2035. To be consistent with the CMWD Urban Water Management Plan (UWMP)[8], the LFMZ forecast for 2033 was escalated by 3 percent to arrive at a year 2035 projection. With an incremental increase of 3.7 million gallons per day (mgd) over the existing average daily demand (ADD) of 19.1 mgd, the 2035 demand for the CMWD service area is projected to be 22.8 mgd. The projected demand of 22.8 mgd is a conservative estimate and does not include future conservation measures and economic impacts that the city is currently experiencing.[9]

The projected water demand at buildout of 22.8 mgd does not include any potential reductions for converting irrigation customers over to recycled water, the reduction of agriculture demand as agriculture uses are replaced with future development, continued conservation measures, or any reductions due to Senate Bill (SB) X7-7 legislation. However, the potential reduction in demand for these factors would be on the order of 1 mgd, and would not significantly impact pipeline hydraulic capacity analysis, but may reduce the size of facilities in the storage and pump station capacity analysis. Demand reductions due to future recycled water conversion projects and the development of agricultural areas were therefore taken into account for both the storage and pump station capacity analyses only. The revised ultimate system demand used in the storage analysis is 21.8 mgd.

Water Sources

The above-normal snowpack and precipitation totals that California experienced during the winter of 2010–2011 have allowed CMWD and other San Diego and Southern California water agencies to rescind their drought alerts, and end the imposition of mandatory water use restrictions for their customers that were in effect the previous two years. Those restrictions were necessary to help the region manage water supply shortages that had arisen due to a combination of factors.

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[8] CMWD. 2011. *2010 Urban Water Management Plan*. Prepared by Brown and Caldwell. San Diego, California.

[9] CMWD, *2012 Water Master Plan.*

As described previously, CMWD currently obtains 100 percent of its potable water supply from SDCWA, of which it is one of 24 member agencies. SDCWA in turn obtains most of its water from the MWD, which obtains its water from Northern California via the California State Water Project (SWP), and from the Colorado River via the Colorado River Aqueduct.

Seawater Desalination

Recognizing the importance of securing a sustainable future water supply that is locally controlled, Carlsbad city officials took a leadership position in working with Poseidon Resources to develop a desalination project in Carlsbad. After 12 years of planning and permitting, the Carlsbad Desalination Project received all of the required final approvals. A 30-year Water Purchase Agreement is in place between SDCWA and Poseidon for the entire output of the future plant. Construction on the plant and pipeline is underway, and it is anticipated that the project will be delivering water by 2016.

Groundwater

CMWD currently does not use any local groundwater and surface water supplies, although in the past both types of water sources have been used. Prior to 1957, the Carlsbad Mutual Water Company supplied local surface water from Lake Calavera and groundwater from the Mission Basin to the City of Carlsbad. In August 1957, the water rights and other assets of the Carlsbad Mutual Water Company were purchased by the City of Carlsbad. In May 1983, through an agreement, these local surface water and groundwater rights were transferred to CMWD by the City of Carlsbad. This included rights to Mission Basin of the San Luis Rey River Valley of five cubic feet per second (cfs) (to 2,382 acre-feet (af)) of groundwater, pre-1914 appropriative rights, and an additional 750 acre-feet per year (afy), up to five cfs, that was permitted in 1938.

The Batiquitos Lagoon Valley Groundwater Basin is the only basin located in CMWD's service area. The San Luis Rey Valley Groundwater Basin is located north of CMWD, and the San Marcos Valley Groundwater Basin is located east of CMWD. Other groundwater basins that could be potential sources of groundwater include Buena Vista Creek Basin, Agua Hedionda Creek Basin, Encinas Creek Basin, and the Batiquitos Hydrologic Subarea. These resources have low potential yields, poor quality, or no available data to substantiate their long term use in the public water supply. Generally speaking, these basins do not have geological characteristics or size comparable to Mission Basin of the San Luis Rey River. Collectively, these groundwater basins could supply only a small portion of CMWD's needs.[10]

Recycled Water

Each year, the CMWD distributes nearly 1.35 billion gallons of recycled water to local irrigation customers. This distribution is the highest per-capita use of recycled water in the

[10] *Ibid.*

county, and nearly 20 percent of the total supply of water distributed by the CMWD, largely a result of supplying recycled water to local golf courses. Recycled water is supplied by three different sources: the Meadowlark Treatment Plant, owned and operated by VWD; the Gafner Treatment Plant, owned and operated by Leucadia Wastewater District (LWWD); and the Carlsbad Water Recycling Facility, owned by CMWD and operated by the Encina Wastewater Authority.

The city distribution system has approximately 77 miles of recycled distribution pipeline and 660 recycled water meters, and currently supplies more than 500 sites. Sites served by recycled water include La Costa Resort and Spa and golf course, Park Hyatt Aviara Resort and golf course, LEGOLAND California, Grand Pacific Palisades Hotel, Karl Strauss Brewery, the Crossings Golf Course, and the Flower Fields, as well as many city parks, median strips, shopping areas, freeway landscaping segments, and "common areas" of many homeowners' associations.

CMWD's existing recycled water customers used a total of 3,517 af (3.1 mgd) of recycled water in calendar year 2010. CMWD's average annual historical recycled water demands obtained from billing records for calendar years 2004 through 2010 are summarized in Table 3.12-1. As seen in Table 3.12-1, CMWD's demands have grown consistently through year 2009, while demands decreased in 2010. Between 2004 and 2009, recycled water demands increased from 1,849 afy (1.7 mgd) to 4,350 afy (3.9 mgd), an increase of 235 percent corresponding to an average annual growth rate of about 19 percent. The primary reason for this growth trend between 2004 and 2009 is the extensive and continued efforts of CMWD to convert and connect new customers to the recycled water system. The growth between 2006 and 2008 was due to the efforts associated with the Phase II expansion of CMWD's recycled water system. However, the annual demand decreased to 3,517 afy (3.1 mgd) in 2010. Several reasons are believed to contribute to the significant decline in 2010 demands, including higher than average precipitation in 2010, increased water conservation, CMWD staff's inspection and auditing practices, and recent increases in recycled water rates combined with the economic downturn.[11]

[11] CWWD. *2012 Recycled Water Master Plan.*

Table 3.12-1: Historical Recycled Water Demands Recycled Water Master Plan CMWD

	Average Annual Demand[1] (afy)						
Usage Category	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Agricultural Irrigation	0	0	0	0	0	0	23
Process Water	0	0	0	0	0	0	0
Landscape Irrigation							
Commercial Property Irrigation	382	427	410	561	827	1,074	637
Community Facilities	8	9	11	13	17	27	49
Golf Courses	596	703	713	780	1,036	1,133	1,033
Highways	52	52	31	46	28	25	11
HOAs	388	468	645	1,087	1,361	1,466	1,369
Resort Irrigation	331	313	275	340	333	340	195
Parks	56	50	76	111	167	195	69
Schools	36	42	35	66	107	85	91
Other							
Construction[2]	0	0	1	32	0	3	0
Public Works[3]	0	0	2	2	2	2	40
Total	**1,849**	**2,064**	**2,199**	**3,038**	**3,878**	**4,350**	**3,517**

[1] Demand from consumption records. Water loss information was not available and not included.

[2] Temporary recycled water customers were primarily for construction water and are tabulated separately in billing records (some of CMWD's summaries of annual demand data may not include this demand category).

[3] Includes street medians, pump station sites, etc.

Source: CMWD. 2012 Recycled Water Master Plan.

CMWD supplies recycled water through two recycled water distribution systems. CMWD's primary recycled water distribution system consists of five pressure zones, three storage tanks, three booster pumping stations, two supply sources with pump stations, and three pressure regulating stations. CMWD also supplies recycled water to the south course of the La Costa Resort and Spa from the Gafner Water Reclamation Plant (WRP) through a separate distribution system with dedicated service to the La Costa Resort and Spa. According to CMWD's pipeline geographic information system (GIS) layer as updated September 2009, of 77 miles, approximately 59 percent of the recycled water distribution system pipelines were installed in the years 2000 through 2009, with less than 1 percent installed prior to 1985.[12]

[12] *Ibid.*

Water Supply Security

CMWD is well positioned to respond to and manage interruptions and shortages of imported water supplies. Over the past decade, SDCWA, on behalf of CMWD and the other SDCWA member agencies, has made significant investments in regional supply reliability through the Emergency Storage Project, the Twin Oaks Water Treatment Plant (WTP), the Aqueduct Protection Program, the Carry-Over Storage Project, and other projects.

Interconnections with neighboring agencies, especially OMWD with that agency's access to raw water storage and treatment at the Olivenhain Reservoir and WTP, and the City of Oceanside with its Weese WTP coupled with access to Second Aqueduct raw water supplies paired with the CMWD's treated water storage resources, in particular 195-MG Maerkle Reservoir, provides CMWD the capability to sustain water deliveries to its customers for 10 days to several weeks depending on demand conditions and initial reservoir levels. The supply reliability benefits provided by CMWD's treated water storage are considerable, and warrant commensurate investments to maintain the integrity, water quality, operability, and availability of these resources.[13]

Water Storage and Distribution

Water storage is used to supply the following water system needs: operational, fire, emergency reserve, and aqueduct shutdown. Water storage for the CMWD is provided by Maerkle Reservoir and 10 additional reservoirs within the distribution system. Maerkle Reservoir is the major treated water storage facility for the CMWD, with a capacity of approximately 600 af (195 million gallons (mg)). This reservoir is used to meet the city's Growth Management Plan requirement to provide a minimum of 10 days of emergency drinking water storage. Under normal operations, water is supplied to Maerkle Reservoir from the SDCWA TAP No. 3 connection and then pumped into the adjacent Maerkle Tank. From the Maerkle Tank, water is supplied by gravity to the distribution system. CMWD has the ability to pump water via the newly constructed Bressi Pump Station at El Camino Real and Palomar Airport Road and feed the higher zones from Maerkle Reservoir, via the upgraded Maerkle flow control facility, in the event of a shutdown of SDCWA's Second Aqueduct.

The required storage volume based on projected ultimate demands was calculated and compared to the capacity of the existing system reservoirs. Total storage capacity within the CMWD service area, which includes the 195-mg Maerkle Reservoir plus in-zone reserve storage of 36 mg, is 244 mg.

The existing distribution system consists of 450 miles of pipeline and 17 major pressure zones that are supplied by gravity from over 50 major pressure regulating stations. CMWD operates and maintains one active pump station and four standby pump stations within the distribution system that are used for emergency purposes only. The CMWD water distribution system is flexible in that supply from the four aqueduct connections can be

[13] CMWD. 2012 Water Master Plan.

routed to different parts of the distribution system by making changes to several key valve settings. This allows system operators to balance reservoir levels and correct for discrepancies in the amount of water ordered versus the amount that is delivered through service connections.[14]

REGULATORY SETTING

This section summarizes key federal, state, and local agencies and regulations that govern water service in Carlsbad.

Federal Regulations

United States Environmental Protection Agency

The 1986 amendments to the Safe Drinking Water Act and the 1987 amendments to the Clean Water Act established the U.S. Environmental Protection Agency (EPA) as the primary authority for water programs. The U.S. EPA is the federal agency responsible for providing clean and safe surface water, groundwater, and drinking water, and protecting and restoring aquatic ecosystems. Carlsbad is in U.S. EPA Region 9 (Pacific Southwest), which includes Arizona, California, Hawaii, Nevada, Pacific Islands, and Tribal Nations.

Federal Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) passed by Congress in 1974, authorizes the EPA to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people.

In California, the State Department of Health Services conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers.

Federal Water Pollution Control Act of 1972 (Clean Water Act)

The principal federal law regulating water quality in the United States is the 1972 Federal Water Pollution Control Act, also known as the Clean Water Act. The fundamental purpose of the Clean Water Act is the protection of designated beneficial uses of water resources. The Clean Water Act establishes a system of water quality standards, discharge limitations, and permits, and requires states to adopt water quality standards to protect public health and welfare, enhance the quality of water, and serve the other purposes of the Clean Water Act.

[14] *Ibid.*

The Clean Water Act was amended in 1987 to include urban and storm water runoff, which required many cities to obtain a National Pollutant Discharge Elimination System (NPDES) permit for storm water conveyance system discharges. Section 402(p) of the Clean Water Act prohibits discharges of pollutants contained in storm water runoff, except in compliance with a NPDES permit, as more fully described below.

Under Section 404 of the Clean Water Act, the U.S. Army Corp of Engineers regulates discharges of dredged or fill material into waters of the United States, requiring issuance of a Section 404 permit. Under Section 401 of the Clean Water Act, a state water quality certification must be obtained whenever an application for a federal permit for discharge of pollutants into waters of the United States is submitted, such as a Section 404 permit. The Section 401 certification requires that any activity affecting waters of the United States be in compliance with all applicable water quality standards, limitations, and restrictions.

Senate Bills 610 and 221

On January 1, 2002, SB 610 took effect. SB 610, which was codified in the Water Code beginning with section 10910, requires the preparation of a water supply assessment (WSA) for projects within cities and counties that propose to construct 500 or more residential units or the equivalent. SB 610 stipulates that when environmental review of certain large development projects is required, the water agency that is to serve the development must complete a WSA to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years during a 20-year projection to meet existing and planned future demands, including the demand associated with a proposed project.

Enacted in 2001, SB 221, which was codified in the Water Code beginning with section 10910, requires that the legislative body of a city or county, which is empowered to approve, disapprove, or conditionally approve a subdivision map, must condition such approval upon proof of sufficient water supply. The term "sufficient water supply" is defined in SB 221 as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the projected demand associated with the proposed subdivision. The definition of sufficient water supply also includes the requirement that sufficient water encompass not only the proposed subdivision, but also existing and planned future uses, including agricultural and industrial uses.

State Regulations

California Department of Public Health

The California Department of Public Health (CDPH) Drinking Water Program is within the Division of Drinking Water and Environmental Management. The Drinking Water Program regulates public water systems; certifies drinking water treatment and distribution operators; supports and promotes water system security; provides support for small water systems and for improving technical, managerial, and financial capacity; and provides funding opportunities for water system improvements. The Field Operations Branch of the Drinking

Water Program is responsible for the enforcement of the federal and California Safe Drinking Water acts and the regulatory oversight of approximately 7,500 public water systems to assure the delivery of safe drinking water to all Californians. In this capacity, Field Operations Branch staff performs field inspections, issues operating permits, reviews plans and specifications for new facilities, takes enforcement actions for noncompliance with laws and regulations, reviews water quality monitoring results, and supports and promotes water system security. The CDPH consists of three branches; Carlsbad falls under the Southern California Field Operation Branch in Region V, District 14 – San Diego.

California State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and nine regional water quality control boards address water quality and rights regulation. Created by the California Legislature in 1967, the five-member SWRCB protects water quality by setting statewide policy, coordinating and supporting the Regional Water Quality Control Board (RWQCB) efforts, and reviewing petitions that contest RWQCB actions. The SWRCB is also solely responsible for allocating surface water rights. Each RWQCB makes critical water quality decisions for its region, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions.

California Department of Water Resources

The California Department of Water Resources (DWR) was established in 1956 by the California Legislature and is responsible for the operation and maintenance of the California SWP. DWR is also responsible for overseeing the statewide process of developing and updating the California Water Plan (Bulletin 160 series); protecting and restoring the Sacramento–San Joaquin Delta; regulating dams, providing flood protection, and assisting in emergency management; educating the public about the importance of water and its proper use; and providing technical assistance to service local water needs.

California Urban Water Conservation Council

All three water districts that serve Carlsbad (CMWD, OMWD, and VWD) are signatories to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California. The CUWCC was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The council's goal is to integrate urban water conservation best management practices (BMPs) into the planning and management of California's water resources. Those signing the MOU pledge to develop and implement 14 comprehensive conservation BMPs. These BMPs are designed to be phased in over about a 10-year period, but CMWD—which serves about 82 percent of the city—has only been a signatory since 2006.

California Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Act is the principal state law enacted to establish requirements for adequate planning, implementation, management, and enforcement of water quality controls. The Porter–Cologne Act, which became Division 7 of the California Water Code, established a regulatory program to protect water quality and beneficial uses of all state waters, outlined the responsibilities and authorities of the nine RWQCBs, and established the SWRCB. For the San Diego Hydrologic Region, water quality is regulated by the RWQCB, Region 9 of the SWRCB. Each RWQCB is directed to create a water quality control plan, to include three main components: (1) beneficial uses which are to be protected; (2) water quality objectives which protect those uses; and (3) an implementation plan to accomplish those objectives.

The Water Conservation Act of 2009 (SB X7-7 (2009))

California legislation enacted in 2009 as SB 7 of the 7th Special Legislative Session (SB X7-7) instituted a new set of urban water conservation requirements known as "20 Percent By 2020." These requirements stipulate that urban water agencies such as CMWD reduce per-capita water use within their service areas by 20 percent relative to their use over the previous 10 to 15 years. The City of Carlsbad plans to comply with the SB X7-7 requirements through a combination of on-going water conservation measures and additional recycled water development.

State Updated Model Landscape Ordinance (Assembly Bill 1881 (2006))

The state's updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by Jan. 31, 2010. The City of Carlsbad adopted Ordinance No. 44 adopting a Drought Response Plan and Water Conservation Program that has been implemented in the city's Municipal Code Chapter 18.50 entitled Water Efficient Landscape, in response to Assembly Bill 1881.

California Urban Water Management Planning Act

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

Urban Water Management Plans

Through the Urban Water Management Planning Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt a UWMP and update it every five years. This requirement applies to all suppliers providing water to more than 3,000 customers or supplying more than 3,000 af of water annually. The act is intended to support conservation and efficient use of urban water supplies at the local level. The act requires that total projected water use be compared to water supply sources over the next 20 years in five-year increments, that planning occur for single- and multiple-dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses.

California Emergency Gray Water Regulations

In 2009, as part of the Governor's declared State of Emergency, Chapter 16A "Nonpotable Water Reuse Systems" was incorporated into the 2007 California Plumbing Code. Chapter 16A establishes minimum requirements for the installation of gray water systems in residential occupancies regulated by the California Department of Housing and Community Development, providing guidance and flexibility designed to encourage the use of gray water. The standards allow small gray water systems to be installed in homes without a construction permit, substantially reducing the barriers to installing small residential gray water systems in California. The purpose of the regulations is to conserve water by facilitating greater reuse of laundry, shower, sink, and similar sources of discharge for irrigation and/or indoor use; to reduce the number of noncompliant gray water systems by making legal compliance easily achievable; to provide guidance for avoiding potentially unhealthful conditions; and to provide an alternative way to relieve stress on private sewage disposal systems.

Local Regulations

San Diego County Water Authority

The SDCWA service area covers approximately 951,000 acres and encompasses the western third of San Diego County. SDCWA was formed in 1944 and has 24 member agencies, 15 of which provide water to unincorporated areas of San Diego County. SDCWA is responsible for ensuring a safe and reliable water supply to support the region's economy and the quality of life for over three million residents.

Carlsbad Municipal Water District

CMWD is a subsidiary district of the City of Carlsbad and delivers water and recycled water to its service area. About 82 percent of Carlsbad gets water service from the CMWD.

Integrated Regional Water Management

The Integrated Regional Water Management (IRWM) program is a local water resources management approach aimed at securing long-term water supply reliability within California by first recognizing the inter-connectivity of water supplies and the environment, and then pursuing projects yielding multiple benefits for water supplies, water quality, and natural resources. The San Diego IRWM program is an interdisciplinary effort by water retailers, wastewater agencies, storm water and flood managers, watershed groups, the business community, tribes, agriculture, and regulatory agencies to coordinate water resource management efforts and to enable the San Diego region to apply for grants tied to the IRWM program. The City of Carlsbad has participated in the organization of the program locally, and in planning, coordination, and supporting watershed activities related to the IRWM.

City of Carlsbad Growth Management Plan

The city's Growth Management Plan, adopted in 1986, helps ensure the provision of adequate facilities for future development. Implementation of the Growth Management Plan was envisioned as a three-level system, involving (1) a Citywide Facilities and Improvement Plan, (2) the preparation of 25 local facilities zone plans, and (3) individual project approvals. The Citywide Facilities and Improvement Plan established the following standard for water distribution:

Line capacity to meet demand as determined by the appropriate water district must be provided concurrent with development. A minimum of 10-day average storage capacity must be provided prior to any development.

WASTEWATER TREATMENT

This section describes applicable regulations, current conditions, and potential impacts of the proposed General Plan with regard to the provision of wastewater service in Carlsbad. The information contained in this section is based on the 2010 Urban Water Management Plan[15] and the 2012 Sewer Master Plan Report prepared by Dudek.[16]

PHYSICAL SETTING

The Carlsbad sewer service area includes the majority of the city, with the exception of the southeast corner of the city. Wastewater collection in the southeastern area, which includes the community of La Costa, is provided by VWD and the LWWD. Carlsbad's Sewer Service Area extends from the Pacific Coast approximately four to five miles inland, providing

[15] CMWD. *2010 Urban Water Management Plan.*

[16] City of Carlsbad. *2012 Sewer Master Plan.*

wastewater collection, treatment, and disposal service to customers within its 30.5-square-mile service area. Sewer flows are conveyed in six interceptors to the Encina Water Pollution Control Facility (EWPCF), which is along the coast and approximately centered north–south in the service area. Five lift stations are part of the interceptor system and 11 smaller lift stations are required in the collection system to convey wastewater flows to the EWPCF.

Wastewater generated within the Carlsbad sewer service area is treated at the EWPCF. The EWPCF provides full secondary treatment, sludge handling, and disposal through a deep ocean outfall. The treatment levels meet current state and federal requirements for secondary treatment. The EWPCF is owned and operated by the Encina Wastewater Authority (EWA), a joint powers authority made up of six northern San Diego County agencies. There have been five major expansions to the EWPCF in its 45 years of operation. In 1995, EWA purchased 37 acres adjacent to the southern boundary of the EWPCF to provide for future facility needs. The Phase V Expansion Project was completed in December 2009 and included new biosolids and energy management facilities, plus improvements to several areas and processes within the EWPCF.[17]

The wastewater amounts generated within Carlsbad's Wastewater Division (CWWD) boundary are estimated to be approximately 5 to 10 percent greater than Carlsbad's sewer service area because it also includes a portion of the LWWD.

Collector System

The City of Carlsbad currently owns, operates, and maintains approximately 264 miles of wastewater collection pipelines, including interceptors, gravity flow collector pipelines, and inverted siphons. The Buena and Vallecitos Interceptors are not included in this total since the City of Vista and Vallecitos water districts are responsible for the maintenance of these lines. The City of Carlsbad is only responsible for a portion of the maintenance cost relative to the city's capacity ownership in each interceptor. The collector sewer system includes approximately 6,300 manholes. The gravity pipelines range in size from six to 27 inches in diameter and up to 60 inches in diameter when including interceptor sewer pipelines.

Pipe materials used throughout the gravity sewer system consist of predominately vitrified clay pipe (VCP) and polyvinylchloride (PVC), but other materials have also been used throughout the years. VCP was predominately installed in the city prior to 1980 with approximately 3 percent of the city's gravity sewers having been installed prior to 1950. A portion of the city's sewers were installed as far back as 1929 in the "Village" area north of Carlsbad Village Drive in the proximity of State Street. Fortunately, much of the city's growth did not occur until the mid-1980s. Approximately 50 percent of the city's gravity sewer system has been installed in the past 25 years.

[17] City of Carlsbad. *2012 Sewer Master Plan*.

According to the city's 2012 Sewer Master Plan, wastewater flows generated within Carlsbad are projected to increase by approximately 27 percent over existing flows, to a projected ultimate flow of approximately 10.0 mgd by the year 2035.[18] A capacity analysis of the city's sewer system was conducted for and presented in the above-mentioned plan. Results from the existing collection system analysis with peak wet weather flows indicate that several gravity pipelines are deficient with respect to the "trigger" criteria.

The Vallecitos Interceptor could result in deficiencies if wet weather flow diversions are not timed adequately. VWD projects will exceed their contracted capacity by 2015 and will have a capacity deficit of 8.59 mgd in the land outfall by 2030, and 10.22 mgd deficit by ultimate buildout. Carlsbad, Vista, and VWD have jointly been studying alternatives to address the future capacity deficits in both the Vallecitos Interceptor and the Buena Interceptor.

While capacity deficiencies in sewer facilities have been identified in infrastructure used by the city, most of the capacity-deficient facilities are limited and have plans to address such deficiencies including new gravity sewers to properly route future flows and monitoring programs to assess inflow and infiltration rates. Analysis results indicate that pipelines are surcharged with pressurized conditions over most of the interceptor length, and flows back up through the first reach on several branched collector pipelines. Model results indicate that all City of Carlsbad lift stations have adequate capacity to convey the existing peak wet weather flow. Recommended improvements to the existing sewer system required to adequately convey, pump, treat, and dispose of the projected ultimate wastewater volumes are also presented in the 2012 Sewer Master Plan Report.

Treatment

EWA's state-of-the-art treatment facility is designed to treat wastewater to the secondary level. Most of the treatment plant's highly treated wastewater is discharged into the ocean through an outfall. Treatment processes at the EWPCF include screening, grit removal, primary clarification, and treatment of activated sludge. The waste-activated sludge is thickened and pumped to anaerobic digesters for stabilization. Biosolids are withdrawn from the digesters and are dewatered, dried, and processed to produce biosolids pellets. The biosolids pellets are transported by truck and sold for reuse as biofuel or fertilizer. The energy management system maximizes on-site power generation to reduce outside energy dependence. The dryer and engine-generators can be fueled by biogas or natural gas, and recovered heat is used to heat the sludge in the anaerobic digesters.

The Encina Phase V Expansion Project, which was completed in 2009, increased treatment capacity to 40.51 mgd, and the biosolids handling capacity to 43.31 mgd. The difference in the two capacities was based on the equivalent amount of sludge disposed back to the sewer system from the Meadowlark WRP, the Shadowridge WRP, and the Gafner WRP. The Shadowridge and Gafner plants previously relied upon the EWPCF for sludge digestion,

[18] *Ibid.*

dewatering, and disposal; however, the Shadowridge WRP is no longer in service, and the Gafner WRP is now a tertiary treatment plant only, treating secondary effluent pumped from Encina and producing recycled water for irrigation at the La Costa South Golf Course. The Phase V Expansion Project added a biosolids heat drying facility and upgraded the cogeneration plant. The City of Carlsbad is currently using approximately 77 percent of its capacity ownership for treatment and solids handling in the EWPCF[19]. The City of Carlsbad currently owns a total treatment capacity of 9.24 mgd in the EWPCF. The City of Carlsbad has submitted a wastewater flow projection of 10.26 mgd, but updated ownership percentages for all the member agencies have not been finalized.

Disposal

Effluent from the EWA plant is discharged to the Pacific Ocean through the Encina Ocean Outfall or delivered to the 4.0 mgd Carlsbad Water Recycling Facility (CWRF) or LWWD's Gafner WRP for further treatment to produce recycled water for irrigation. The Encina Ocean Outfall system includes flow equalization facilities, which were upgraded in 2005, the effluent pump station, and the outfall. When influent flows exceed the hydraulic capacity of the outfall, the excess secondary effluent is pumped to the flow equalization facilities. When flow rates fall to within acceptable levels, the stored effluent flows by gravity back to the outfall. The equalization allows the plant to pass high flows associated with storm events at a flow rate greater than the hydraulic capacity of the downstream outfall.

The Encina outfall extends along the ocean floor to a point 1.5 miles off shore, at a depth of over 150 feet. The outfall pipeline consists of two individual sections, including the original 48-inch, 6,600-foot outfall constructed in 1965 and the 72-inch, 2,300-foot extension constructed in 1973. The outfall extension project also added an 800-foot diffuser system to the end of the outfall. The current capacity of the Encina Ocean Outfall is estimated to be approximately 75 mgd. It is noted that the reported peak wet weather flow capacity of the outfall takes into account the flow equalization facilities.[20]

Carlsbad's peak flow capacity rights in the outfall per the Revised Basic Agreement are 25.51 mgd, which is based on a peaking factor of 2.76 times the average dry weather flow. Peak hourly flows from Carlsbad cannot be determined from Encina flow meters since Carlsbad flows are subtracted from other agency flows. Resultant peak flows from Carlsbad at Encina are likewise not directly available from the hydraulic analysis, since peak flows in the interceptors occur at different hours in the simulation. Based on the peaking factor curves and the estimates of inflow and infiltration generated within the Carlsbad service area, the PWWF from Carlsbad is estimated to be approximately 20 mgd, which is 2.5 times the average dry weather flow. It is therefore estimated that the City of Carlsbad is currently using approximately 80 percent of its capacity ownership in the Encina Ocean Outfall. It is noted

[19] Dudek, 2012 Sewer Master Plan. Available: http://www.carlsbadca.gov/services/utilities/Documents/SewerMasterPlanReport.pdf

[20] *Ibid.*

that the City of Carlsbad diverts up to 4.0 mgd of flow during summer months to produce recycled water, which reduces effluent flow to the outfall.[21]

REGULATORY SETTING

This section summarizes existing federal, state, and local agencies' policies and regulations that apply to wastewater services analyzed in this section.

Federal Regulations

Federal Water Pollution Control Act of 1972 (Clean Water Act)

See previous regulatory discussion.

National Pollutant Discharge Elimination System

The Clean Water Act was amended in 1987 to include urban and storm water runoff, which required many cities to obtain an NPDES permit for storm water conveyance system discharges. Section 402(p) of the Clean Water Act prohibits discharges of pollutants contained in storm water runoff, except in compliance with a NPDES permit, as more fully described below.

Under Section 404 of the Clean Water Act, the U.S. Army Corp of Engineers regulates discharges of dredged or fill material into waters of the United States, requiring issuance of a Section 404 permit. Under Section 401 of the Clean Water Act, a state water quality certification must be obtained whenever an application for a federal permit for discharge of pollutants into waters of the United States is submitted, such as a Section 404 permit. The Section 401 certification requires that any activity affecting waters of the United States be in compliance with all applicable water quality standards, limitations, and restrictions.

State Water Resources Control Board

On May 2, 2006, the SWRCB adopted a General Waste Discharge Requirement (WDR) (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSOs) by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system, to prevent sanitary sewer waste from entering the storm sewer system, and to develop a Sewer System Management Plan. In response to the 2006 WDR Order, the City of Carlsbad prepared a Sanitary Sewer System Management Plan, which was approved by Council Resolution No. 2009-192 at a meeting held on July 21, 2009. The plan was subsequently submitted to the SWRCB, and the requirements of the report were implemented by staff. The General WDR also requires that storm sewer overflows be reported to the SWRCB using an online reporting system.

[21] *Ibid.*

State Regulations

California Porter–Cologne Water Quality Control Act

See previous regulatory discussion.

Local Regulations

City of Carlsbad Municipal Code

The City of Carlsbad's public sewer system is regulated by Chapter 13 of the city's Municipal Code entitled Sewers. Chapter 13 requires the use of public sewers where connections are available with required permits, prohibits unsanitary deposits and sewer overflow, and includes general prohibitions.

City of Carlsbad Growth Management Plan

The citywide Growth Management Plan established the following standards for sewer collection and wastewater treatment:

Sewer Collection System Performance Standard – Trunk line capacity to meet demands as determined by the appropriate sewer district must be provided concurrent with development.

Wastewater Treatment Capacity Performance Standard – Sewer plant capacity is adequate for at least a 5-year period.

As part of the Growth Management Plan, the Carlsbad was partitioned into 25 separate planning areas, which are identified as Local Facility Management Zones (LFMZs). The City of Carlsbad's sewer service area includes all or portions of LFMZs 1-10, 13-22, 24, and 25.

STORM WATER

This section describes existing regulations and physical conditions of storm water facilities in Carlsbad as found in the City of Carlsbad's Drainage Master Plan of 2008[22], as well as potential impacts of the proposed General Plan with regard to storm water facilities. Impacts to hydrology and water quality related to storm water are addressed in Section 3.8.

PHYSICAL SETTING

The City of Carlsbad's storm water conveyance system is made up of streets, gutters, curb inlets, pipes, ditches, basins and drains, as well as natural drainage such as creeks and lagoons. Because storm drains are not connected to sanitary sewer or treatment facilities, rainwater and urban runoff transport pollutants directly into Carlsbad's waterways.

[22] Available: http://www.carlsbadca.gov/business/building/codes-standards/Pages/drainage-master-plan.aspx.

The city's conveyance system consists mainly of drainage inlets for interception of runoff, junction structures that connect inlets and pipe networks, culverts, and channels that transport runoff. In addition to inlets, culverts, and junction structures, the city's storm drain system incorporates the use of detention/desiltation basins. The purpose of a detention basin is to store storm water runoff flows to attenuate the peak-flow resulting from a storm event.

Storm water is regulated by the City of Carlsbad through their local Standard Urban Storm Water Management Plan (SUSWMP), which is based on the countywide model and revised to address the city's local needs. The SUSWMP identifies specific post-construction site design, source control, and treatment control storm water BMPs that must be incorporated into the priority development projects. The city has updated its SUSWMP to incorporate appropriate requirements in response to Order No. R9-2013-0001; it provides information on selection and implementation of the site design, source control, and treatment control BMPs.[23]

The city's Storm Water Protection Program covers all phases of development through planning, construction and existing development, and educates and monitors developers, businesses, municipal facilities, residents, school children, and the general public to help prevent pollutants and other hazardous materials from entering storm drains.[24]

The SUSWMP states that certain development projects in the city are subject to creating Storm Water Management Plans (SWMPs) that must meet the following criteria:

- Satisfying standard storm water requirements. These generally consist of incorporating low impact development (LID), site design, and source control BMPs into a project.
- Selection and numeric sizing of treatment control BMPs so that development runoff will be infiltrated or else treated by these permanent facilities.
- Incorporating flow-control (hydromodification) facilities to ensure that post-development project runoff peak-flow rates and duration do not exceed pre-development figures (hydromodification). Certain projects may be considered exempt from hydromodification requirements.

REGULATORY SETTING

This section summarizes existing regulations that apply to storm water quality and storm water drainage.

[23] *Ibid.*

[24] *Ibid.*

Federal Regulations

The following federal regulations affect storm water services in Carlsbad.

Clean Water Act

See previous regulatory discussion.

Local Regulations

The following local regulations and agencies affect storm water services in Carlsbad.

San Diego Regional Water Quality Control Board

See previous regulatory discussion.

City of Carlsbad Municipal Code

Carlsbad Municipal Code Chapter 15.12, Storm Water Management and Discharge Control, contains regulations to ensure that the City of Carlsbad complies with the San Diego RWQCB Order No. R9-2013-0001 and the NPDES Permit No. CAS0109266. The ordinance establishes general requirements applicable to all discharges, as well as city standards and minimum BMP requirements for residential, commercial, industrial, and municipal activities and facilities.

City of Carlsbad Storm Water Pollution Prevention Plans

The City of Carlsbad has established three different types of Storm Water Pollution Prevention Plans (SWPPPs) to ensure protection against the discharge of pollutants into city receiving waters (streams, lakes, lagoons, or ocean). Each SWPPP identifies BMPs to reduce or eliminate pollutants from entering the receiving waters during development or use of a property to.

Construction SWPPP: defines temporary BMPs for the elimination and control of pollutants during construction activities. Every construction permit issued by the city that has the potential to contribute pollutants to a receiving water is required to have a city-approved Construction SWPPP. The city has a three-tiered Construction SWPPP review process corresponding to projects with a high, medium, or low construction threat to water quality. Prospective applicants must complete a Construction Threat Assessment Worksheet to determine what tier level of Construction SWPPP will be required.

Storm Water Management Plan (SWMP): defines permanent BMPs for the elimination and control of pollutants resulting from the development of a property. Projects that pose a long-term threat to water quality are designated as "priority projects" and require approval of a SWMP. Priority projects that require preparation and approval of a SWMP also require that

the owner enter into a city standard Permanent Storm Water Quality Best Management Practice Maintenance Agreement.

Business Activity SWPPP: defines BMPs for the elimination and control of pollutants resulting from certain specified commercial and industrial activities occurring at a particular property. The need for a Business Activity SWPPP is determined by the city during the city business license review. Projects requiring a Business Activity SWPPP are subject to annual inspection requirements pursuant to the city's Jurisdictional Urban Runoff Management Plan (JURMP).[25]

City of Carlsbad Jurisdictional Urban Runoff Management Program

The purpose of the city's JURMP is to implement programs to reduce pollution in urban runoff, including programs to regulate new public and private land development during each of the three major phases of urban development, i.e., the planning, construction, and existing development (or use) phases. Each component of the JURMP closely follows the order of the permit requirements.

The JURMP will be revised as needed to reflect changes in the city's urban runoff management programs such as revised or new BMPs or new educational or training programs.[26]

City of Carlsbad Watershed Urban Runoff Management Program

The Carlsbad Watershed Urban Runoff Management Program (WURMP) has been prepared by the City of Carlsbad, as lead agency, in collaboration with the cities of Oceanside, Vista, San Marcos, Escondido, Encinitas, and Solana Beach, as well as the County of San Diego—all local agencies that have jurisdiction within the Carlsbad Watershed Management Area.[27]

The goal of the Carlsbad WURMP is to reduce the discharges of pollutants from the municipal separate storm sewer system (MS4) to the maximum extent practicable and prevent urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards. The program meets the requirements of the NPDES Municipal

[25] City of Carlsbad. "Storm Water." City of Carlsbad website. Accessed September 26, 2012. http://www.carlsbadca.gov/business/building/permitting-process/design-plan/pages/storm-water-protection.aspx.

[26] City of Carlsbad. "Storm Water Protection: Jurisdictional Urban Runoff Management Plan." City of Carlsbad website. Accessed September 26, 2012. http://www.carlsbadca.gov/services/environmental/Storm-Water-Protection/Pages/StudiesReports.aspx.

[27] City of Carlsbad. "Storm Water Protection: Watershed Urban Runoff Management Program." City of Carlsbad. Accessed September 26, 2012. http://www.carlsbadca.gov/services/environmental/Storm-Water-Protection/Pages/StudiesReports.aspx.

Storm Water Permit for San Diego Co-permittees (Order No. R9-2013-0001, NPDES No. CAS0109266).[28]

City of Carlsbad Storm Water Protection Program

Through the city's Storm Water Protection Program, the city conducts inspections and monitoring, and provides education and outreach to residents and businesses about how to prevent pollutants and other hazardous materials from entering storm drains.

SOLID WASTE DISPOSAL

This section describes applicable regulations, current conditions, and potential impacts of the proposed General Plan with regard to the provision of solid waste service in the City of Carlsbad.

PHYSICAL SETTING

The City of Carlsbad provides solid waste collection and disposal services through its contractor, Waste Management Inc. The services provided consist of residential, commercial, and industrial solid waste and designated recyclables collection service to over 20,000 single-family households and more than 2,000 commercial accounts. The city currently diverts approximately 61 percent of the solid waste generated within its jurisdiction from landfills. Solid waste that is not diverted from Carlsbad is hauled to two landfills in San Diego County. The majority of the solid waste is sent to the Otay Landfill (approximately 98 percent), with the balance disposed of at the Sycamore Landfill (approximately 2 percent). The Otay Landfill has a permitted daily capacity of 5,000 tons but is receiving only 2,260 tons daily, with an estimated remaining site life to 2027, according to the county. The Otay Landfill had a remaining capacity of 27 million cubic yards as of March 2010. Based on the remaining capacity and disposal rates, the Otay Landfill is expected to close in 2027.

The Sycamore Landfill has a maximum permitted daily capacity of 3,965 tons per day and a remaining capacity of 71 million cubic yards as of February 2011. The Sycamore Landfill is undergoing environmental review to permit a facility expansion. The expansion is anticipated to allow increased through-put volumes and annual and daily permitted tonnage over time (e.g., beyond 2040), which could result in an estimated additional capacity of up to 153 million cubic yards. Should the expansion occur as planned, the landfill would not be expected to close until approximately 2042. The County of San Diego has indicated that, given each existing landfill's estimated remaining capacity, and assuming the planned expansion of the Sycamore Landfill is implemented, as is the opening of the proposed

[28] *Ibid.*

Gregory Canyon Landfill, the County of San Diego would have enough daily landfill capacity to accommodate the county's solid waste disposal needs for the next 18 years.[29]

REGULATORY SETTING

Solid waste handling and disposal is regulated at the state level. Specific regulations relevant to the proposed General Plan are described below.

State Regulations

California's Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) is the state's leading authority on recycling, waste reduction, and product reuse. Officially known as the California Department of Resources Recycling and Recovery, CalRecycle plays an important role in the stewardship of California's vast resources and promotes innovation in technology to encourage economic and environmental sustainability. CalRecycle brings together the state's recycling and waste management programs and continues a tradition of environmental stewardship. Mandated responsibilities of CalRecycle are to reduce waste, promote the management of all materials to their highest and best use, and protect public health and safety and the environment.

California Integrated Waste Management Act (AB 939)

AB 939, California's Integrated Waste Management Act of 1989, mandates that 50 percent of solid waste be diverted by the year 2000 through source reduction, recycling, and composting. AB 939 also establishes a goal for all California counties to provide at least 15 years of ongoing landfill capacity. This requires each region to prepare a source reduction and recycling element to be submitted to CalRecycle, which administers programs formerly managed by the state's Integrated Waste Management Board and Division of Recycling. The city adopted a Source Reduction and Recycling Element meeting this requirement. The City of Carlsbad met the 50 percent requirement nine out of 12 years from 1995–2006. A proposed amendment to the Integrated Waste Management Act would require CalRecycle to adopt programs to increase statewide diversion to 75 percent by 2020.

California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327)

AB 1327 was established in 1991, which required CalRecycle to develop a model ordinance for the adoption of recyclable materials in development projects. Local agencies were then required to adopt the model, or an ordinance of their own, governing adequate areas for

[29] County of San Diego. *Five-Year Review Report of the County Integrated Waste Management Plan for the County of San Diego*. Prepared by the County of San Diego Department of Public Works. March 23, 2011.

collection and loading of recyclable materials in development projects (refer to Carlsbad Zoning Ordinance 6.08 Solid Waste).

Disposal Measurement System Act of 2008 (SB 1016)

SB 1016 maintains the 50 percent diversion rate requirement established by AB 939, while establishing revised calculations for those entitles who did not meet the 50 percent diversion rate. SB 1016 also established a per capita disposal measurement system to make the process of goal measurement, as established by AB 939, simpler, timelier, and more accurate. The new disposal-based indicator—the per capita disposal rate—uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities.

Solid Waste Diversion (AB 341)

Effective July 1, 2012, AB 341 requires that commercial enterprises that generate four cubic yards or more of solid waste weekly participate in recycling programs. This requirement also includes multifamily housing complexes of five units or more, regardless of the amount of solid waste generated each week.

Local Regulations

San Diego Solid Waste Local Enforcement Agency

The San Diego County Department of Environmental Health, Solid Waste Local Enforcement Agency (LEA) is responsible for ensuring the proper operation and closure of solid waste facilities and disposal sites in San Diego County, excluding the City of San Diego. The LEA also provides solid waste inspection and permitting services to the various jurisdictions within the county, including the regulation of storage and transportation of solid wastes.

San Diego County Integrated Waste Management Plan

The County Integrated Waste Management Plan (CIWMP) fulfills one of the requirements of the Integrated Waste Management Act. The CIWMP consists of a Countywide Siting Element, a Countywide Summary Plan, and three elements from each jurisdiction: (1) a Source Reduction and Recycling Element (SRRE), which analyzes the local waste stream to determine where to focus diversion efforts, and presents diversion programs and funding; (2) a Household Hazardous Waste Element (HHWE), which includes programs to encourage safe management of household toxics waste and provides a framework for recycling, treatment, and proper disposal. The HHWE also addresses funding. Finally (3), each jurisdiction is required to prepare a Non-Disposal Facility Element (NDFE), which lists existing and planned facilities.[30]

[30] County of San Diego. *San Diego County Integrated Waste Management Plan.* Prepared by the County of San Diego Department of Public Works. January 5, 2005. Approved by the California Integrated Waste

City of Carlsbad Municipal Code

The city's Municipal Code Chapter 6.8 outlines policies and regulations regarding solid waste receptacles and disposal services.

Carlsbad Planning Documents

The city has adopted three additional plans relevant to solid waste services: the SRRE, the HHWE, and the NDFE. These three plans were prepared in compliance with the requirements of AB 939. They are part of the Integrated Waste Management Plan approved by the CIWMB in September 2005.

The following countywide policies have been adopted in the SRREs to reduce disposal and increase recycling: (1) jurisdictions in the county should maintain policies of purchasing products with a post-consumer (recycled) material content and encourage contractors in their jurisdictions to use recycled material; (2) jurisdictions should maintain recycling policies/ordinances to divert recyclable materials from solid waste disposal facilities; (3) jurisdictions will continue educational programs, either directly or through private sector efforts, for the general public, schools, and businesses, with emphasis on waste prevention, reuse, recycling, and composting; (4) jurisdictions will be encouraged to consider implementing a variable rate pricing structure for the collection of municipal solid waste, giving incentives to recycling; (5) jurisdictions will be encouraged to continue their efforts to ban landfill disposal of targeted recyclable materials; (6) jurisdictions will be encouraged to increase composting of organic materials; (7) jurisdictions will maintain policies to promote consistent and proper disposal of Household Hazardous Wastes; and (8) jurisdictions will provide space allocation plans and access for recycling bins in residences and commercial establishments, as required by law.[31]

Impact Analysis

SIGNIFICANCE CRITERIA

A significant impact would occur with full implementation of the proposed General Plan if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

Management Board, September 20-21, 2005. http://www.sdcounty.ca.gov/reusable_components/images/dpw/recyclingpdfs/summaryplan.pdf.

[31] *Ibid.*

- Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Violate federal, state, or local statutes and regulations related to solid waste.

METHODOLOGY AND ASSUMPTIONS

The analysis for this section addresses impacts to public utilities and city infrastructure due to projected growth arising from the proposed General Plan changes. Subsequent CEQA review at the project level may be required to determine whether significant environmental effects would result from the construction of water distribution lines, wastewater collection system components, storm drainage conveyance pipes, and any onsite storage or pumping facilities on development sites, or other utilities improvements. Project-level review will occur when proposed development plans are prepared.

SUMMARY OF IMPACTS

Future development under the proposed General Plan could generate additional demand for water and wastewater, storm water, and solid waste services; however, compliance with federal, state, and local regulations, as well as policies in the proposed General Plan would ensure that impacts of the proposed General Plan would be less than significant. The water and wastewater districts providers within the city have prepared urban water management plans, recycled water management plans, water master plans and sewer master plans to assess the current and future demands of their service area. Compliance with federal, state and local water and wastewater regulations and the proposed General Plan policies would reduce potential impacts to water and wastewater service needs and infrastructure needs to less than significant levels. Compliance with the city's current grading, drainage, and storm water regulations would ensure that the capacity of the storm water drainage systems would not be exceeded, and impacts would be less than significant. Potential impacts to solid waste would be reduced through compliance with SB X7-7, which has been set by CalRecycle to provide 75 percent recycling, composting, or source reduction of solid waste by 2020. Implementation of the proposed General Plan policies would assist the city in complying with this new waste

reduction goal. Therefore, implementation of the proposed General Plan would result in less than significant impacts to solid waste.

IMPACTS

Impact 3.12-1 Development under the proposed General Plan would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. (*Less than Significant)*

Implementation of the proposed General Plan would result in future residential, commercial, office, and industrial uses in the planning area, resulting in additional population that would generate additional wastewater. Therefore, wastewater treatment would increase over current levels. Wastewater services for a majority of Carlsbad are provided by the City of Carlsbad. Wastewater generated within the city's sewer service area is treated at the EWPCF, which provides full secondary treatment, sludge handling, and disposal through a deep ocean outfall. The current treatment capacity at the EWPCF is 40.51 mgd. Carlsbad's current ownership capacity for treatment at the EWPCF is 9.24 mgd (average flow). The 2012 CWWM Sewer Master Plan projected future 2035 wastewater flows to be approximately 10.0 mgd, based on growth estimates prior to the proposed General Plan. The city has requested an additional 1.02 mgd for a total of 10.26 mgd, which is currently pending. Buildout under the proposed General Plan would result in additional wastewater that would need to be treated at the EWPCF. The EWPCF meets all current regional, state, and federal requirements for secondary treatment and is expected to continue to meet these requirements. Current regulations require compliance with water quality standards and these measures would preclude development lacking adequate utility capacity, including wastewater treatment capacity. Individual developments would be reviewed by the city and the applicable wastewater providers to determine sufficient sewer capacity exists to serve the additional population that would be generated by the future projects. The city will continue to coordinate with the wastewater districts to ensure that new development would not exceed the capacity of wastewater conveyance and treatment facilities, and that new development would pay development fees to increase capacity of those facilities. Implementation of these requirements would ensure that new wastewater facilities are constructed to meet performance standards and allow for future maintenance.

The proposed project would require an update to the Encina Wastewater Authority's Biosolid Management Plan. A discussion of specific future impacts and associated mitigation measures for each wastewater treatment improvement that may be identified in the Biosolid Management Plan is beyond the scope of this EIR; however, future treatment capacity projects can be expected to include both construction-related and operation-related impacts. The construction and operation of new or expanded treatment facilities to serve new development under the proposed General Plan could have the potential to cause secondary environmental effects to air quality, noise, cultural resources, biological resources, hydrology, and water quality or other environmental issues. Any future treatment projects in the city would be required to conduct environmental review pursuant to CEQA prior to approval. CEQA requires proposed projects to provide detailed information about the potentially

significant environmental effects they could possibly create, identify ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the project. To the extent feasible, the environmental impacts associated with the construction of new treatment facilities would be mitigated to below a level of significance, consistent with CEQA.

Furthermore, the proposed General Plan includes goals and policies to promote sustainability by locating new development near existing infrastructure, thereby reducing the potential for environmental impacts associated with extensive infrastructure improvements over long tracts of land. In addition, the proposed General Plan goals and policies are intended to ensure that future development occurs according to the city's Growth Management Plan and is coordinated with availability of public facilities, including wastewater treatment facilities. Therefore, through compliance with existing and future regulations, implementation of the proposed General Plan policies impacts would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Land Use and Community Design Element Policies

2-G.22 Ensure that adequate public facilities and services are provided in a timely manner to preserve the quality of life of residents.

2-G.23 Develop programs that correlate the projected population with the service capabilities of the city.

2-P.8 Do not permit residential development to exceed the applicable Growth Management Control Point (GMCP) density unless the following findings are made:

a. The project qualifies for and will receive an allocation of "excess" dwelling units, pursuant to City Council Policy No. 43.

b. The project will provide sufficient additional public facilities for the density in excess of the GMCP to ensure that the adequacy of the city's public facilities plans will not be adversely impacted.

c. There have been sufficient residential projects approved at densities below the GMCP so the citywide and quadrant dwelling unit limits will not be exceeded as a result of the proposed project.

d. All necessary public facilities required by the Citywide Facilities and Improvements Plan will be constructed, or are guaranteed to be constructed, concurrently with the need for them created by this development and in compliance with adopted city standards.

2-P.55 Ensure the dwelling unit limitations of the Growth Management Plan are adhered to when approving any residential General Plan amendment, zone change, tentative subdivision map or other discretionary permit.

2-P.56 Require compliance with Growth Management Plan public facility performance standards, as specified in the Citywide Facilities and Improvements Plan, to ensure that adequate public facilities are provided prior to or concurrent with development.

2-P.57 Coordinate future development with the Capital Improvement Program (CIP) to ensure adequate funding for needed facilities and services; and prioritize the funding of CIP projects to provide facilities and services to infill areas, in transit priority or planned smart growth areas, and areas where existing deficiencies exist.

2-P.58 Maintain the Growth Management monitoring and annual reporting program, which: a) monitors the number of existing and future dwelling units compared to the growth management dwelling unit limitations, and b) measures the city's public service requirements against the rate of physical growth. Use this information to establish priorities for capital improvement funding, and when considering development requests.

Mitigation Measures

None required.

Impact 3.12-2 Development under the proposed General Plan would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects. (*Less than Significant)*

Implementation of the proposed General Plan would result in future residential, commercial, and industrial land uses in the planning area, resulting in additional population. Additional population would generate additional demand for water and wastewater services, and therefore, an increased demand for water provision and wastewater collection, conveyance, and treatment services over currently established levels.

Construction of Water Facilities

Three water districts provide water service within Carlsbad: CMWD, OMWD, and VWD. The CMWD services approximately 82 percent of the city. The OMWD services a portion of the city's southern area, and VWD services a portion of the city's southeastern area. The majority of the proposed land use changes would occur within the CMWD service area; only two land use changes are proposed within the OMWD service area; and no changes are proposed in the VWD service area.

Carlsbad Municipal Water District

The CMWD's 2010 Urban Water Management Plan, dated June 2011, states that the CMWD has no current or planned future water supply projects other than possible expansions to the recycled water supply; these expansions would mitigate for the projected water demand and demand for wastewater facilities. In addition, the Poseidon desalination plant has been approved and is projected to provide an additional 50 mgd, of which 10,000 af has been proposed to be utilized/purchased for utilization throughout Carlsbad.[32]

The CMWD Water Master Plan (CMWD WMP) was updated in April 2012 based on the city's approved land uses, Growth Management Plan, and growth projections generated by SANDAG. The ultimate water demand used for the CMWD WMP was based on buildout occurring in 2035. The CMWD WMP determined the 2035 demand for the CMWD service area is projected to be 22.8 mgd. This projection does not fully account for the additional growth that would be generated by the proposed General Plan. The projected water demand at buildout of 22.8 mgd is considered a conservative estimate as it does not include any potential reductions for converting irrigation customers over to recycled water, the reduction of agricultural demand as agriculture uses are replaced with future development, continued conservation measures, or any reductions due to SB X7-7 legislation. However, the potential reduction in demand from these factors would be approximately 1 mgd.[33]

Implementation of the proposed General Plan would result in future residential, commercial, office, industrial and hotel uses in the planning area, resulting in additional population. The majority of the future growth generated by the proposed General Plan would be located within the CMWD service area. The City has identified efforts to conserve water, increase use of recycled water, and continue to consider new alternative sources of water. While CMWD does not currently use any local groundwater or surface water supplies, both types of water sources have been used in the past. Of the groundwater basins available to CMWD, the Mission Basin of the San Luis Rey River has the most potential for a viable water resource. CMWD is currently evaluating its plans for utilization of groundwater in the Mission Basin, which may become cost effective as technology continues to improve and imported water costs continue to increase.

As provided in the CMWD WMP, it is possible that the Water Authority could deliver desalinated water directly east and north to blend the new water source with other sources before conveyance in the aqueduct system. The CMWD is not required to construct any new facilities as currently proposed by the Water Authority.

The proposed General Plan would require an update to the CMWD WMP. A discussion of specific future impacts and associated mitigation measures for each water supply project is beyond the scope of this EIR; however, future water supply projects can be expected to include both construction-related and operation-related impacts. The construction and

[32] CMWD. *2010 Urban Water Management Plan*.

[33] CMWD. *2012 Water Master Plan.*

operation of new or expanded water facilities to serve new development under the proposed General Plan could have the potential to cause secondary environmental effects to air quality, noise, cultural resources, biological resources, hydrology, and water quality or other environmental issues. Any future water projects in the city would be required to conduct environmental review pursuant to CEQA prior to approval. CEQA requires proposed projects to provide detailed information about the potentially significant environmental effects they could possibly create, identify ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the project. To the extent feasible, the environmental impacts associated with the construction of new water facilities would be mitigated to below a level of significance, consistent with CEQA.

Furthermore, the proposed General Plan includes goals and policies to promote sustainability by locating new development near existing infrastructure, thereby reducing the potential for environmental impacts associated with extensive infrastructure improvements over long tracts of land. In addition, the proposed General Plan goals and policies are intended to ensure that future development occurs according to the city's Growth Management Plan and is coordinated with availability of public facilities, including water facilities. Therefore, through compliance with existing and future regulations, and implementation of the proposed General Plan policies, impacts would be less than significant.

Olivenhain Municipal Water District

The land use changes proposed to occur within the OMWD are limited to changing the General Plan land use designation of an existing commercial center from "Local Shopping Center/Open Space" to "General Commercial/Open Space"; and changing an approved office use to multifamily residential use. Since the change in local shopping center to general commercial still results in a commercial use, there would be no change in water demand from this proposed land use change. The open space designation will continue to be applied to land that is currently undevelopable due to steep slopes. The second land use change from office use to multifamily residential use would decrease the amount of water needed to serve this site. Therefore, the proposed General Plan would not necessitate the construction of new water facilities or the expansion of existing water facilities for the OMWD service area. Impacts would be less than significant.

Construction of Wastewater Treatment Facilities

Three wastewater districts provide sewer services to the city's planning area: CWWD, LWWD, and VWD. The CWWD services approximately 82 percent of the city. LWWD services a portion of the city's southern area. VWD services a portion of the city's southeastern area. The majority of the proposed land use changes would occur within the CWWD service area; only two land use changes are proposed within the LWWD service area; and no changes are proposed in the VWD service area.

Implementation of the proposed General Plan would result in future residential, commercial, office, and industrial uses in Carlsbad, resulting in additional population that would generate additional wastewater. Therefore, wastewater collection, conveyance, and treatment services would increase over current levels. Wastewater services for the majority of Carlsbad are provided by the CWWD. Wastewater generated within the CWWD's sewer service area is treated at the EWPCF. The current treatment capacity at the EWPCF is 40.51 mgd. Carlsbad's current ownership capacity for treatment at the EWPCF is 9.24 mgd (average flow). The 2012 Sewer Master Plan projected future 2035 wastewater flows to be approximately 10.0 mgd, based on growth estimates prior to the proposed General Plan. The city has requested an additional 1.02 mgd for a total of 10.26 mgd, which is currently pending. Buildout under the proposed General Plan would result in additional wastewater that would need to be treated at the EWPCF.

The proposed General Plan would allow for additional growth beyond the CWWD growth projections. Current regulations require compliance with water quality standards and would not allow development without adequate utility capacity, including water or wastewater treatment capacity. Future development projects allowed under the proposed General Plan would be reviewed by the city and the applicable water and wastewater providers to determine that sufficient capacity exists to serve the development. In addition, the city's Sewer Master Plan would be updated to reflect the proposed General Plan growth projections.

As discussed previously in Impact 3.12-2, the proposed General Plan contains goals and policies that promote sustainability and reduce impacts associated with construction of new facilities by limiting the need for additional water supplies. The policies presented below would help to reduce the future demand for water and demand of wastewater treatment capacity due to water conservation measures, use of on-site gray water, and the proposed water sub-metering ordinance. In addition, the proposed General Plan goals and policies are intended to ensure that future development occurs according to the city's Growth Management Plan and is coordinated with availability of public facilities, including wastewater facilities. These conservation policies coupled with SB X7-7 conservation goals and current practices would reduce the significance of impacts related to the construction of new wastewater facilities to less-than-significant levels.

Leucadia Wastewater District

Only two land use changes are proposed in LWWD, including a change in commercial use from "Local Shopping Center/Open Space" to "General Commercial/Open Space"; and changing an approved office use to multifamily residential use. As discussed previously, no change to the water use would result from the change in the commercial designation and a decrease in water use would result from the land use change from office to multi-family residential use. Therefore, the amount of wastewater generated from these changes would also result in a decrease in wastewater services in the LWWD. Therefore, the proposed General Plan would not necessitate the construction of new wastewater facilities or the expansion of existing wastewater facilities for the LWWD service area. Impacts would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Land Use and Community Design Element Policies

Goals 2-G.22 and 2-G.23, and Policies 2-P.8, and 2-P.55 through 2-P.58, listed above, in addition to those presented below, reduce impacts related to construction of new water or wastewater treatment facilities.

2-P.34 Encourage soil and water conservation techniques in agricultural activities.

Sustainability Element Policies

9-G.4 Strive to reduce the city's reliance on imported water.

9-P.3 Develop and implement a water sub-metering ordinance for multi-family rental and mixed-use buildings.

9-P.4 Consider irrigation and landscape design measures for the municipal golf course (Crossings at Carlsbad) that will result in decreased water consumption.

9-P.5 Undertake measures to expand the use of recycled water for landscape irrigation and commercial and industrial process water. Encourage potential future customers identified in the latest Recycled Water Master Plan to retrofit their water systems to utilize recycled water as it becomes available and cost-effective to do so.

9-P.6 Promote the use of on-site gray water and rainwater collection systems through education, expedited permitting review, fee exemptions and other measures.

9-P.7 Investigate the feasibility of developing full-functioning groundwater systems in the San Luis Rey River Mission Groundwater Basin and Cannon Well Field within or near Rancho Carlsbad in order to reduce the city's reliance on imported water.

Mitigation Measures

None required.

Impact 3.12-3 Development under the proposed General Plan would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (*Less than Significant)*

Development under the proposed General Plan would allow for the conversion of undeveloped land to new urban uses, or the redevelopment of existing developed areas that would generate increased storm water volumes in portions of Carlsbad. Increased flows

would in turn create a need for new infrastructure in growth areas, to accommodate infiltration of storm water or to convey storm water to detention basins to prevent flooding. Construction of new storm water infrastructure could in and of itself have adverse effects on the physical environment; however, the required improvements would occur within rights-of-way and other already disturbed areas within the development footprint of the proposed General Plan.

As described in Section 3.8, the City of Carlsbad's Grading and Drainage Ordinances and Storm Water Standards Manual ensures compliance with NPDES permit requirements, as well as with applicable state and federal laws. Additionally, projects that would result in the disturbance of one acre or more of land or would create more than 5,000 square feet of impervious surfaces are subject to the post-construction priority development project requirements in the Carlsbad Storm Water Standards Manual and must prepare a storm water management plan. Projects that are limited to trenching and resurfacing and do not disturb more than one acre are subject to the post-construction standard storm water requirements. Compliance with the city's current regulations would ensure that the capacity of the storm water drainage systems would not be exceeded, and impacts would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Open Space, Conservation and Recreation Element Policies

4-P.49 Prevent agricultural run-off and other forms of water pollution from entering the storm drain system and polluting the city's water bodies.

4-P.56 Work with the stakeholders in the community and region, such as but not limited to the San Diego Regional Water Quality Control Board (RWQCB), California Fish and Wildlife, US Fish and Wildlife, Coastal Commission, Army Corps of Engineers, Environmental Protection Agency, neighboring cities, counties, businesses, residents, and non-profit groups, to comply with applicable federal, state and local regulations related to water quality in our region, consistent with the city's current NPDES Municipal Storm Water Permit issued by the RWQCB or other related regulations. Prepare and implement any applicable plans such as a Water Quality Improvement Plan, Integrated Regional Water Management Plan, Load Reduction Plan or others as needed to comply with applicable regulations.

4-P.57 Require developments to incorporate structural and non-structural best management practices (BMPs) to mitigate or reduce the projected increases in pollutant loads. Do not allow post-development runoff from a site that would cause or contribute to an exceedance of receiving water quality objectives or has not been reduced to the maximum extent practicable.

4-P.58 Implement water pollution prevention methods to the maximum extent practicable, supplemented by pollutant source controls and treatment. Use small collection strategies located at, or as close as possible to, the source (i.e.,

the point where water initially meets the ground or source of potential pollution) to minimize the transport of urban runoff and pollutants offsite and into a municipal separate storm sewer system (MS4).

4-P.59 Make any necessary structural control changes to the storm water conveyance system to remove or reduce storm water pollutant levels.

4-P.60 Conduct analysis of the effectiveness of the overall pollution prevention programs in Carlsbad consistent with the city's NPDES Municipal Storm Water Permit issued by the RWQCB or other related regulations.

4-P.61 Continue to implement a program to detect and eliminate illicit connections to storm drains and illegal discharges of non-storm water wastes into storm water conveyance systems.

4-P.62 Continue to implement a program for the testing and monitoring of storm water and/or non-storm water flows consistent with the city's NPDES Municipal Storm Water Permit issued by the RWQCB or other related regulations.

4-P.63 Preserve, where possible, natural watercourses or provide naturalized drainage channels within the city. Where feasible, implement restoration and rehabilitation opportunities.

4-P.64 Coordinate the needs of storm water pollution management with habitat management, flood management, capital improvement projects, development, aesthetics and other open space needs.

Mitigation Measures

None required.

Impact 3.12-4 Development under the proposed General Plan would not have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements. (*Less than Significant)*

Water in the planning area is provided by CMWD, OMWD, and VWD. CMWD services approximately 82 percent of the city's area. The OMWD services a portion of the city's southern area. VWD services a portion of the city's southeastern area. The majority of the proposed land use changes would occur within the CMWD service area; only two land use changes are proposed within the OMWD service area; and no changes are proposed in the VWD service area.

As described previously, all three water districts that serve the city are signatories to the CUWCC MOU Regarding Urban Water Conservation in California, meaning they pledge to

develop and implement 14 comprehensive conservation BMPs, which would decrease water supply demands of the city.

Carlsbad Municipal Water District

As discussed above in Impact 3.12-2, the CMWD WMP was updated in April 2012 based on the city's approved land uses, Growth Management Plan, and growth projections generated by SANDAG. The ultimate water demand used for the CMWD WMP was based on buildout occurring in 2035. The CMWD WMP determined the 2035 demand for the CMWD service area is projected to be 22.8 mgd. Furthermore, the projected water demand of 22.8 mgd at buildout is considered a conservative estimate as it does not include any potential reductions for converting irrigation customers over to recycled water, the reduction of agricultural demand as agriculture uses are replaced with future development, continued conservation measures, or any reductions due to SB X7-7 legislation. However, the potential reduction in demand from these factors would be approximately 1 mgd.[34]

In addition to purchasing water from the SDCWA[35], CMWD plans to meet future water projections from the use of groundwater and increasing recycled water usage. CMWD does not currently use any local groundwater or surface water supplies (although both types of water sources have been used in the past). Of the groundwater basins available to CMWD, the Mission Basin of the San Luis Rey River has the most potential for a viable water resource. CMWD is currently evaluating its plans for utilization of groundwater in the Mission Basin, which may become cost effective as technology continues to improve and imported water costs continue to increase. According to the CMWD UWMP, groundwater volumes would provide 1,000 afy of pumped water to the water supply. These supplies are projected to be available in all water supply condition scenarios (normal year, single-dry year, multiple-dry year events, dry year events that occur for two or more consecutive years, typically one to three years).[36]

In addition to utilizing groundwater supplies, CMWD also plans on increasing the use of recycled water. It is the policy of CMWD to use recycled water wherever it is feasible. Furthermore, it is the city's policy to require the use of recycled water on all new land use developments proposed in Carlsbad for all state-approved non-potable uses, when it is available. Table 3.12-2 shows the current and projected water supply volumes within the CMWD service area.

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[34] CMWD. *2012 Water Master Plan*.

[35] As described in the CMWD 2012 Urban Water Management Plan, the Poseidon desalination project is a SDCWA project, and will contribute to the SDCWA supply purchased by CMWD. Poseidon's Carlsbad Desalination Project will provide approximately 7 percent of the drinking water supply for the San Diego region. For more information on this project, see http://www.carlsbadca.gov/services/departments/water/pages/seawaterdist.aspx

[36] CMWD. *2010 Urban Water Management Plan*.

Table 3.12-2: Current and Projected Water Supplies (afy)

Water Supply Sources	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*
SDCWA	16,710	21,348	21,610	22,260	22,909	23,286
Supplier-produced groundwater	0	0	1,000	1,000	1,000	1,000
Recycled water	3,517	5,000	6,500	6,500	6,500	6,500
Total	**19,687**	**26,348**	**29,110**	**29,760**	**30,409**	**30,786**

Source: CMWD. 2010 Urban Water Management Plan. *Table 4-8.*

As shown in Tables 3.12-3 and 3.12-4, during normal, single-dry years, and the first year of a multiple-dry year the water supplied is consistent with the demand totals for the year 2015, but the supply is projected to exceed the demand in years 2020 to 2035 by 1,000 afy, based on current growth projections.

Table 3.12-3: CMWD Normal Year & Single Dry Year Supply and Demand Comparison (afy)

	2015	*2020*	*2025*	*2030*	*2035*
Supply Totals	26,348	29,110	29,760	30,409	30,786
Demand Totals	26,348	28,110	28,760	29,409	29,786
Difference (Supply minus demand)	0	1,000	1,000	1,000	1,000

Source: CMWD. 2010 Urban Water Management Plan

Table 3.12-4: CMWD Supply and Demand Comparison – Multiple-Dry Year Events (afy)

		2015	*2020*	*2025*	*2030*	*2035*
Multiple-Dry Year, First-year supply	Supply Totals	26,348	29,110	29,760	30,409	30,786
	Demand Totals	26,348	28,110	28,760	29,409	29,786
	Difference (Supply minus demand)	0	1,000	1,000	1,000	1,000
Multiple-Dry Year, Second-year supply	Supply Totals	26,879	29,239	29,888	30,484	N/A
	Demand Totals	26,691	28,239	28,888	29,484	N/A
	Difference	187	1,000	1,000	1,000	N/A

	(Supply minus demand)					
Multiple-Dry Year, Third-year supply	Supply Totals	27,420	29,368	30,018	30,560	N/A
	Demand Totals	27,039	28,368	29,018	29,560	N/A
	Difference (Supply minus demand)	381	1,000	1,000	1,000	N/A

N/A: Doesn't include additional supplies and demands for dry years, as it is beyond the planning horizon for the UWMP.

Source: CMWD. 2010 Urban Water Management Plan.

According to the 2010 CMWD UWMP, the CMWD expects to have adequate water supply available to meet the projected demand within their jurisdictions to 2035, due to future projects and/or meeting SB X7-7 water conservation goals. These improvements may include the need to utilize local groundwater and surface water supplies.

As provided in the CMWD WMP, it is possible that the Water Authority could deliver desalinated water directly east and north to blend the new water source with other sources before conveyance in the aqueduct system. The CMWD is not required to construct any new facilities as currently proposed by the Water Authority. However, depending on the conveyance scheme proposed by the Water Authority, it is possible that in the future the CMWD could request and benefit from a new connection to the desalinated water conveyance pipeline. This connection would provide a fifth Water Authority source of water to the CMWD, providing an increase in reliability for the southerly part of the system.[37] Because this source of water was uncertain during the preparation of the 2012 CMWD WMP, it was referenced as a potential future project, but was not included in the recommended capital improvement projects planned for within the 2012-2030 phased projects. However, it was noted that CMWD will continue to monitor the progress of the desalination project and would work with the Water Authority in determining the best means of delivery of the desalinated water to the CMWD. Construction of the desalination plant began in 2012, and is currently projected to be online delivering water in 2016. This new water source paired with already planned improvements to facilities and conservation measures at the federal, state and local level would yield an adequate supply of water and wastewater treatment facilities for current growth projections.

The proposed General Plan goals and policies are intended to ensure that future development occurs according to the city's Growth Management Plan and is coordinated with availability of public facilities, including water supply. The Growth Management Plan requires a minimum 10-day average storage capacity for water supply prior to any development. The proposed General Plan policies, listed below would reduce the city's overall water usage by

[37] CMWD 2010 Master Plan.

reducing water consumption for landscaping and irrigation, increasing use of recycled water, and promoting use of graywater and rainwater collection systems. In addition, the CMWD Water Master Plan would need to be updated to reflect the proposed General Plan growth projections. Therefore, compliance with existing and future regulations and, implementation of the proposed General Plan policies would ensure that impacts are less than significant.

Olivenhain Municipal Water District

OMWD's water need assumptions are based on currently approved land use and projected future demand as analyzed in the OMWD 2010 UWMP. OMWD projections were based on purchasing water from SDCWA, as well as the use of recycled water and desalinated water for its future water supplies. As shown in Tables 3.12-5 and 3.12-6, the OMWD has adequate supplies to meet its projected demands through buildout year 2035, except for year 2015 in the third year of a multiple-dry year. However, the land use changes proposed to occur within the OMWD are limited to changing the General Plan land use designation of an existing commercial center from "Local Shopping Center/Open Space" to "General Commercial/Open Space"; and changing an approved office use to multifamily residential use. Since the change in local shopping center to general commercial still results in a commercial use, there would be no change in water demand from this proposed land use change. The second land use change from office use to multifamily residential use would decrease the amount of water needed to serve this site. Therefore, the proposed land use changes within the OMWD's service area would result in a decrease in water demand ; and impacts would be less than significant.

Table 3.12-5: OMWD Supply and Demand Comparison for Normal Year and Single Dry Year Scenarios

	2015	*2020*	*2025*	*2030*	*2035*
Supply Totals	24,318	26,212	27,972	29,986	31,192
Demand Totals	24,318	26,212	27,972	29,986	31,192
Difference	0	0	0	0	0

Source: OMWD (Olivenhain Municipal Water District). 2011. 2010 Urban Water Management Plan, Tables 35 and 36.

Table 3.12-6: OMWD Supply and Demand Comparison for Multiple Dry-Year Events

		2015	*2020*	*2025*	*2030*	*2035*
Multiple-Dry Year, First-year supply	Supply Total	28,638	31,432	33,392	35,406	36,612
	Demand Total	25,799	26,998	28,811	30,886	32,128
	Difference	2,839	4,434	4,581	4,520	4,484
Multiple-	Supply Total	28,638	31,432	33,392	35,406	36,612

Dry Year, Second-year supply	Demand Total	27,347	28,618	30,540	32,739	34,056
	Difference	1,291	2,814	2,852	2,667	2,556
Multiple-Dry Year, Third-year supply	Supply Total	28,638	31,432	33,392	35,406	36,612
	Demand Total	28,988	30,335	32,372	34,703	36,099
	Difference	-350	1,097	1,020	703	513

Source: OMWD. 2010 Urban Water Management Plan. Table 37.

Proposed General Plan Policies that Reduce the Impact

Goals 2-G.22, 2-G.23 and 9-G.4, and Policies 2-P.8, 2-P.56 through 2-P.59 and 9-P.3 through 9-P.7, listed above would help ensure the city would have sufficient water supplies available to serve the project.

Mitigation Measures

None required.

Impact 3.12-5 Development under the proposed General Plan would not result in a determination by the wastewater treatment provider which serves or may serve Carlsbad that it has inadequate capacity to serve the proposed General Plan's projected demand in addition to the provider's existing commitments. (*Less than Significant)*

Three wastewater districts provide sewer services to Carlsbad: CWWD, LWWD, and VWD. The CWWD services approximately 82 percent of the city's area. LWWD services a portion of the city's southern area. VWD services a portion of the city's southeastern area. The majority of the proposed land use changes would occur within the CWWD service area; only two land use changes are proposed within the LWWD service area; and no changes are proposed in the VWD service area.

Implementation of the proposed General Plan would result in future residential, commercial, office, and industrial uses in Carlsbad, resulting in additional population that would generate additional wastewater. Therefore, wastewater collection, conveyance, and treatment services would increase over current levels. Wastewater services for the majority of Carlsbad are provided by the City of Carlsbad. Wastewater generated within the city's sewer service area is treated at the EWPCE. The current treatment capacity at the EWPCF is 40.51 mgd. Carlsbad's current ownership capacity for treatment at the EWPCF is 9.24 mgd (average flow). The 2012 Sewer Master Plan projected future 2035 wastewater flows to be approximately 10.0 mgd, based on growth estimates prior to the proposed General Plan. The city has requested an additional 1.02 mgd for a total of 10.26 mgd, which is currently pending. Buildout under the proposed General Plan would result in additional wastewater that would need to be treated at the EWPCF.

As described under Impact 3.12-2, implementation of the proposed General Plan is expected to exceed the current and pending treatment capacities for the city and additional capacity would need to be developed. The proposed General Plan includes goals and policies that would help reduce impacts, as described below. In addition, current regulations require compliance with water quality standards and would not allow development without adequate utility capacity, including wastewater treatment capacity. Future development projects allowed under the proposed General Plan would be reviewed by the city and the applicable wastewater providers to determine that sufficient capacity exists to serve the development.

The policies presented below would help to reduce the future demand for wastewater treatment capacity due to water conservation measures, use of on-site gray water, and the proposed water sub-metering ordinance. These conservation policies, coupled with SB X7-7 conservation goals and current practices, would mitigate and reduce the significance of impacts related to capacity of wastewater facilities to less than significant.

Proposed General Plan Policies that Reduce the Impact

Goals 2-G.22 and 2-G.23, and Policies 2-P.8, 2-P.56 through 2-P.59, 9-P.10, and 9-P.11, listed above, would reduce potential impacts related to wastewater capacity.

Mitigation Measures

None required.

Impact 3.12-6 Development under the proposed General Plan would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs. (*Less than Significant)*

There are a total of six active landfill facilities within San Diego County: Borrego Landfill, Otay Landfill, West Miramar Sanitary Landfill, Sycamore Landfill, San Onofre Landfill, and Las Pulgas Landfill. The Las Pulgas and San Onofre landfills are owned and operated by the United States Marine Corps, and are not available for public disposal. Table 3.12-7 identifies the active landfills that are open to the public and their capacity information. As shown in this table, the total remaining capacity for all active landfills open to the public is 88,851,168 cubic yards.

Table 3.12-7: San Diego County Landfill Capacity

Land fill	*Status*	*Waste Type*	*Maximum permitted capacity (cubic yards)*	*Maximum Permitted Throughput (tons/day)*	*Remaining Capacity (cubic yards)*	*Estimated Closure Date*
West Miramar Sanitary Landfill	Active/ Permitted	Construction/ demolition, mixed municipal,	87,760,000	8,000	16,473,000[1]	January 31, 2017

Table 3.12-7: San Diego County Landfill Capacity

Land fill	*Status*	*Waste Type*	*Maximum permitted capacity (cubic yards)*	*Maximum Permitted Throughput (tons/day)*	*Remaining Capacity (cubic yards)*	*Estimated Closure Date*
		tires.				
Sycamore Sanitary Landfill	Active/ Permitted	Asbestos, contaminated soil, mixed municipal, sludge (biosolids), agricultural, dead animals, tires, shreds, wood waste, other designated	48,124,462	3,965,000	47,388,428[2]	December 31, 2031
Otay Landfill	Active/ Permitted	Agricultural, ash, construction/ demolition, contaminated soil, dead animals. Green material, industrial, inert, mixed municipal, other designated, sludge, tires.	61,154,000	5,300	24,514,904[3]	February 28, 2028
Borrego Landfill	Active/ Permitted	Agricultural, construction/ demolition, mixed municipal, sludge, tires, wood waste.	844,000	50	478,836[4]	October 31, 2030
Total Capacity			**197,882,462**	**3,978,350**	**88,851,168**	

1 The remaining capacity date for the West Miramar Sanitary Landfill was determined on July 30, 2007.

2 The remaining capacity date for the Sycamore Sanitary Landfill was determined on September 30, 2006.

3 The remaining capacity date for the Otay Landfill was determined on March 31, 2012.

4 The remaining capacity date for the Borrego Landfill was determined on August 31, 2009.

Sources:

CalRecycle (California Department of Resources Recycling and Recovery). "Facility/Site Summary Details: West Miramar Sanitary Landfill." CalRecycle. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Accessed: September 12, 2013.

CalRecycle. "Facility/Site Summary Details: Sycamore Sanitary Landfill." CalRecycle. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Accessed: September 12, 2013.

CalRecycle. "Facility/Site Summary Details: Otay Landfill." CalRecycle. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Accessed: September 12, 2013.

CalRecycle. "Facility/Site Summary Details: Borrego Landfill." CalRecycle. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Accessed: September 12, 2013.

The City of Carlsbad provides solid waste hauling services via a contract with Waste Management of North County. Solid waste is collected by Waste Management and transported to the Sycamore Canyon and Otay landfills for disposal. Table 3.12-8 provides the trend of solid waste generated within Carlsbad. As shown in the table, the amount of solid waste disposed from the city has been on a decreasing trend due to the economic downturn, compliance with regulations, and implementation of existing recycling programs.

Table 3.12-8: Carlsbad Disposal Tonnage Trend

Year	*Tons of Disposal*
2007	129,802
2008	122,397
2009	110,574
2010	107,918
2011	110,429

Source: Calrecycle. "Jurisdiction Disposal Tonnage Trend." CalRecycle. Accessed September 12, 2013. www.calrecycle.ca.gov/LGCentral/Reports/Reserved.ReportViewerWebControl.axd.

Implementation of the proposed General Plan would result in future residential, commercial, and industrial land uses in Carlsbad, resulting in additional population and increased solid waste generation within the city. AB 939 requires local governments to divert 50 percent of their community's solid waste, and the recent goal that has been set by CalRecycle of 75 percent recycling, composting, or source reduction of solid waste by 2020.

Per the 2011 County of San Diego's Five Year Review Report of the County Integrated Waste Management Plan,[38] there is more than 15 years of solid waste disposal capacity in San Diego

[38] County of San Diego. 2011. *Five-Year Review Report of the County Integrated Waste Management Plan for the County of San Diego*. Prepared by the County of San Diego Department of Public Works.

County as required by state law. It is likely that changes in regulations will occur that will decrease the need for landfill capacity through new recycling measures. The proposed General Plan policies provided below are designed to reduce impacts to solid waste facilities. Therefore, compliance with solid waste regulations and implementation of the proposed General Plan policies, impacts would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Goal 2-G.22, Goal 2-G.23, Policy 2-P.8, Policy 2-P.56 through Policy 2-P.59 listed above, in addition to those presented below, would help ensure the city would have sufficient capacity to accommodate the project's solid waste disposal needs.

Sustainability Element Policies

9-P.9 Adopt a construction and demolition waste recycling ordinance that requires, except in unusual circumstances, all construction, demolition and renovation projects meeting a certain size or dollar value, to divert from landfills 100 percent of all Portland cement concrete and asphalt concrete and an average of at least 50 percent of all remaining non-hazardous debris from construction, demolition, and renovation projects.

Public Safety Element Policies

6-P.26 Support public awareness and participation in household hazardous waste management, solid waste, and recycling programs.

Mitigation Measures

None required.

Impact 3.12-7 Development under the proposed General Plan would comply with federal, state, and local statues and regulations related to solid waste. (*Less than Significant)*

California AB 939 became law in 1989 and established the California Integrated Waste Management Board (CIWMB). AB 939 mandated that California generate a 25 percent diversion rate by 1995 and a 50 percent diversion rate by 2000. In 2005, California diverted 52 percent of its waste from landfills; therefore, the state, including the City of Carlsbad, reached this goal and is in compliance with this law. As of January 1, 2010, CIWMB was abolished and its responsibilities were transferred to the CalRecycle. CalRecycle's vision is to achieve the highest waste reduction, recycling, and reuse goals in the nation. The legislature and Governor Brown, through enactment of AB 341, set a goal of 75 percent recycling, composting, or source reduction of solid waste by 2020. Instead of focusing primarily on local diversion, the law calls for the state and CalRecycle to take a statewide approach to decreasing California's reliance on landfills.

The County of San Diego assesses its solid waste needs every five years and generates an Integrated Waste Management Plan. According to the Five-Year Review Report of the

County Integrated Waste Management Plan for the County of San Diego, there has been a significant decrease in estimated disposal tonnage from the 2005 estimates, due to increased conservation and recycling activities combined with the recent economic downturn. [39] San Diego County has been able to provide sufficient countywide disposal although population has steadily increased. Considering the 2002 permitted daily tons and predicted landfill expansions, plus exports minus predicted imports, the regression analysis predicted sufficient landfill space will be available until 2028.

Development of future land uses, as designated in the proposed General Plan, would be required to comply with federal, state, and local statutes and regulations related to solid waste. Furthermore, the policies provided in the proposed General Plan regarding solid waste disposal, recycling, etc., would further ensure compliance with applicable regulations. Therefore, impacts associated with solid waste regulations would be less than significant.

Proposed General Plan Policies that Reduce the Impact

Policies 9-P.9 and 6-P.26 listed above, in addition to those presented below, would help ensure the proposed General Plan would comply with federal, state, and local solid waste regulations.

Public Safety Element Policies

6-P.19 Limit hazards associated with the manufacture, use, transfer, storage and disposal of hazardous materials and hazardous wastes through enforcement of applicable local, county, state and federal regulations.

6-P.21 Regulate locations for the manufacture, storage, and use of hazardous materials within the city through implementation of Carlsbad Municipal Code Title 21 (Zoning Ordinance).

Mitigation Measures

None required.

[39] County of San Diego. *Five-Year Review Report of the County Integrated Waste Management Plan for the County of San Diego*.

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