

4.13 UTILITIES AND INFRASTRUCTURE

This chapter describes the existing water, wastewater, stormwater and solid waste infrastructure and services in the San Carlos city limit and Sphere of Influence (SOI) and the potential environmental impacts from the implementation of the Draft 2030 General Plan and the Climate Action Plan (CAP) on these services. The following chapter is organized according to type of utility, with existing conditions, standards of significance and analysis of project-level and cumulative impacts analyzed individually. Storm drainage systems and groundwater are addressed below as well as in Chapter 4.7, Hydrology and Water Quality.

A. *Water*

The following section describes current water conditions and potential impacts of the Draft 2030 General Plan on water services in San Carlos.

1. **Regulatory Framework**

This section summarizes existing federal and State agencies, policies and regulations that apply to water services being analyzed in this section.

a. **Federal and State Regulatory Agencies**

The Environmental Protection Agency (EPA) is the federal agency assigned to maintain safe air and water throughout the country. San Carlos is in EPA Region 9, which includes Arizona, California, Hawaii, Nevada, the Pacific Islands and over 140 Tribal Nations. The State Water Quality Control Board (SWQCB) works with the EPA to control and reduce pollutants from entering drinking water sources.

b. **Federal and State Regulations**

Federal and State regulations that affect water services in San Carlos are described below.

i. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) authorizes the EPA to set national standards for drinking water, the National Primary Drinking Water Regula-

tions, to protect against both naturally-occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require ways for all water providers in the United States to treat water to remove contaminants for all water providers in the United States, 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.

ii. SB 610 and SB 221

Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended State law to ensure better coordination between local water supply and land use decisions, and ensure adequate water supply for new development. Both statutes require that detailed information regarding water availability be provided to City/Town and County decision-makers prior to approval of large development projects.¹

iii. Urban Water Management Planning Act

Through the Urban Water Management Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (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 acre-feet of water annually.² 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

¹ Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. <http://www.owue.water.ca.gov/Guidebook.pdf>, accessed on March 3, 2009.

² One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1-foot.

wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses.³

iv. Groundwater Management Act

The Groundwater Management Act of the California Water Code (AB 3030) provides guidance for applicable local agencies to develop a voluntary Groundwater Management Plan (GMP) in State-designated groundwater basins. GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities maintenance and water quality.⁴

2. Existing Conditions

This section discusses the existing water utilities and infrastructure in the city limit and SOI. San Carlos manages a water infrastructure system, which consists of 21 storage tanks and 29 booster pumps.⁵ San Carlos receives its water from two local domestic water providers: the California Water Service Company (Cal Water) and the Mid-Peninsula Water District. Cal Water utilizes San Carlos' water infrastructure to distribute water. The Mid-Peninsula Water District, on the other hand, utilizes its own infrastructure, which is described below. These two local domestic water providers purchase water from the San Francisco Public Utilities Commission (SFPUC).

³ California Water Code Division 6 Part 2.6 Urban Water Management Planning. <http://www.owue.water.ca.gov/docs/UWMPAct.pdf>, accessed March 3, 2009.

⁴ California Department of Water Resources' website. http://www.groundwater.water.ca.gov/water_laws/ab3030_gma/, accessed on March 9, 2009.

⁵ California Water Service Co., 2007, "Bayshore District: 2007 Water Quality Report for San Carlos."

a. SFPUC

The primary source of SFPUC's water is spring snowmelt from the Tuolumne River. This water is stored at the Hetch Hetchy Reservoir. The projected wholesale non-drought water supply from the SFPUC for the year 2030 is 300 million gallons per day (MGD). During normal precipitation years, the SFPUC is expected to have adequate supplies to meet customers' water demands, including water supplied to Cal Water and the Mid-Peninsula Water District. For projected single and multiple dry-year supply and demand in 2030, the SFPUC supply is 270 MGD.⁷ In 2002, SFPUC began a \$4.3 billion, multi-year capital program, the Water System Improvement Program (WSIP), to upgrade the regional and local drinking water systems.⁸

b. California Water Service Company

Cal Water is a San Jose-based water utility company with more than 460,000 customers throughout California and is the main water provider in San Carlos. Water service in San Carlos is managed by Cal Water's Bayshore District. The projected water use from the Cal Water Bayshore District for 2030 is 18.1 MGD.⁹ San Carlos has a projected 2030 average demand of 4.8 MGD. Cal Water is currently able to meet water demand for its San Carlos residential service area.¹⁰

To encourage water conservation, Cal Water uses a series of tiered rates that feature increased water costs as usage goes up. Tiers are based on the average residential customer's annual water use from 2005. Cal Water encourages

⁷ San Francisco Public Utilities Commission, 2005, *2005 Urban Water Management Plan for the City and County of San Francisco*, pages 47 to 50.

⁸ San Francisco Public Utilities Commission, 2009, *Hetch Hetchy Water System Improvement Program: Quarterly Report, Q2 FY 2008-2009*, page 1.

⁹ San Francisco Public Utilities Commission, 2004, *SFPUC Wholesale Customer Demand Projections Technical Report*, page 5-2.

¹⁰ CDM, 2008, *Cal Water Mid-Peninsula Water Supply & Facilities Master Plan*, page 3-17.

water conservation through rebate programs for purchasing water-saving household items, providing free water-saving plumbing fixtures, distributing literature on conservation practices and talks at local schools. Cal Water does not currently have a recycled water system in San Carlos, but it does offer water recycling in other parts of the state and estimates that water recycling will likely be offered in San Carlos within the next few years. Cal Water also reduces water loss by repairing water distribution system leaks.¹¹ Cal Water would have sufficient water supply to meet the demand of the additional 1,436 housing units proposed in the 2030 General Plan through wells that would be installed in South San Francisco and San Mateo. Water would be purchased from the San Francisco Public Utilities Commission.¹²

c. Mid-Peninsula Water District

Although Cal Water is the primary water service provider in San Carlos, the Mid-Peninsula Water District serves 154 accounts in a five square mile area that includes the City of Belmont and small portions of the City of San Carlos, Redwood City and unincorporated parts of San Mateo County. The district serves approximately 28,000 people.¹⁵

The Mid-Peninsula Water District supplies water in San Carlos through pump stations and regulating stations. The entire system has 11 storage tanks with available storage of 13 million gallons, 9 pump stations, 13 regulating stations and 6 intertie locations with neighboring agencies. There is one facil-

¹¹ Water Conservation, <http://www.calwater.com/conservation/index.php>, accessed on March 17, 2009.

¹² Carrasco, Anthony. Acting District Manager, Bayshore California Water Service Company. Personal email communication with Alejandro Huerta, DC&E, April 13, 2009.

¹⁵ Chester, Brent. Engineering Tech, Mid-Peninsula Water District Facilities. Personal email communication with Alejandro Huerta, DC&E, March 4, 2009.

ity in San Carlos consisting of two 100,000-gallon steel tanks and a hydro-pneumatic pump station. The Mid-Peninsula Water District has replaced about 25 percent of its pipe system over the last 15 years. Improvements include emergency back-up generators. Water shortages are addressed by the SFPUC through mandatory water rationing. The District does not currently recycle water.¹⁶ SFPUC projects that the Mid-Peninsula Water District will have a demand of 3.8 MGD by 2030.¹⁷ The safe yield of the SFPUC systems is 2.9 MGD and the normal yield is 3.9 MGD system-wide.¹⁸

3. Standards of Significance

The Draft 2030 General Plan and CAP would have a significant impact on water services if it would:

- a. Have insufficient water supplies available to serve the project from existing entitlements and resources.
- b. Require or result in the construction of new facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4. Draft 2030 General Plan Impact Discussion

The water supply impact discussion considers the Draft 2030 General Plan growth projections, which include 1,436 new residential units, and about an additional 724,030 commercial gross square footage, by 2030.

a. Water Supplies

New development generated by the Draft 2030 General Plan has the possibility to result in potentially significant impacts to water supply and distribution facilities serving the project area. To ensure that there is enough water for

¹⁶ Chester, Brent. Engineering Tech, Mid-Peninsula Water District Facilities. Personal email communication with Alejandro Huerta, DC&E, March 4, 2009.

¹⁷ San Francisco Public Utilities Commission, 2004, *SFPUC Wholesale Customer Demand Projections Technical Report (URS 2004)*, page 5-2.

¹⁸ Chester, Brent. Engineering Tech, Mid-Peninsula Water District Facilities. Personal email communication with Alejandro Huerta, DC&E, March 4, 2009.

future growth, the Draft 2030 General Plan directs the City to ensure that sufficient water supply is available for new development over the next 21 years. Goal EM-5 of the Environmental Management Element sets policies to assure a high level of domestic water quality. In particular, Policy EM-5.8 calls for the City to work with water service providers to provide high quality domestic water.

As stated above, the California Water Service Company would have sufficient water supply through 2030 to accommodate the future demand under the General Plan. While the growth projections proposed in the Draft 2030 General Plan are not calculated into the SFPUC water demand projections for the Cal Water Bayshore District or Mid-Peninsula Water District, there would be negligible change from the proposed housing units relative to the SFPUC projections. Therefore, the Draft 2030 General Plan would have a *less-than-significant* impact on water supply.

To help ensure that there is sufficient water supply, the Draft 2030 General Plan also contains policies and actions in place to reduce water demand through water conservation and water recycling. To encourage water conservation, Policy EM-5.3 of the Environmental Management Element promotes the conservation and efficient use of water in new and existing residences, and also by commercial and industrial consumers. Policy EM-5.4 encourages the use of drought-resistant landscaping. Policy EM-5.5 calls for a recycled distribution system that should be used for landscaping and other non-potable water uses for residential, commercial and industrial customers. Finally, Actions EM-5.5 and 5.6 establish water conservation goals for City buildings and evaluate incentives for the use of drought-tolerant landscaping and recycled water for landscape irrigation.

b. Water Facilities

The San Carlos water infrastructure system currently includes 21 storage tanks and 29 booster pumps. The *Cal Water Mid-Peninsula Water Supply & Facilities Master Plan* recommends that Cal Water pursue a strategy for the Mid-Peninsula that includes various supply components. However, since San

Carlos is built-out, there are no plans for future system improvements.¹⁹ Similarly, while the Mid-Peninsula District has renovated its infrastructure in the last 15 years, it does not propose future improvements.

Because of the built-out nature of San Carlos, future infrastructure improvements will include replacement of existing pipe and possible capacity upgrades. However, it is unknown at this time exactly where new water infrastructure will be placed. As specific projects, including water system improvements, are identified, additional project-specific environmental analysis would be completed pursuant to CEQA. Therefore, the impact is *less than significant*.

5. Climate Action Plan Project Impacts

The CAP would not affect water supply or create the need for the construction of new facilities. Therefore, the proposed CAP would have *no impact* to water services in San Carlos.

6. Cumulative Impacts

Future regional growth would result in a need for expanded water supply infrastructure throughout San Mateo County. To address the potential effects of future regional growth, SFPUC has completed the Water Supply Diversification Program to upgrade the SFPUC Regional Water System as part of the WSIP. This program includes efforts in recycled water and conservation, installation of groundwater wells and the development of a regional groundwater desalination project. The improvements planned by this program will ensure that new growth throughout the region will be sufficiently served by water suppliers. Therefore, the Draft 2030 General Plan would not contribute to a significant cumulative impact associated with the provision of water infrastructure.

¹⁹ Johnson, Mark. California Water Service Company. Personal email communication with Alejandro Huerta, DC&E, May 21, 2009

7. Impacts and Mitigation Measures

Since there are no significant impacts related to water supplies and water facilities as a result of the Draft 2030 General Plan, no mitigation measures are required.

B. Wastewater

The following describes current conditions and potential impacts of the Draft 2030 General Plan and the CAP with regard to wastewater services in San Carlos.

1. Regulatory Framework

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

a. Federal and State Regulations

This section describes federal and State regulations that affect wastewater services in San Carlos.

i. Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), which was passed in California in 1969, the State Water Resources Control Board (SWRCB) has the ultimate authority over State water rights and water quality policy. Porter-Cologne also establishes nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis at the local/regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater.²⁰ The City of San Carlos is overseen by the San Francisco Bay RWQCB.

²⁰ California Environmental Resources Evaluation System's website. http://ceres.ca.gov/wetlands/permitting/Porter_summary.html, accessed on August 20, 2007.

ii. San Francisco Bay Regional Water Quality Control Board

Refer to Section 4.7, Hydrology and Water Quality, for information on the San Francisco Bay RWQCB.

iii. Sanitary District Act

As part of the California Health and Safety Code section 6400 et seq, the Sanitary District Act of 1923 was created with the purpose for any area in a county, or in two or more counties within the same natural watershed area, to acquire, construct and operate garbage dumps and garbage disposal systems, sewerage systems, drainage works and water reclamation and distribution systems.²¹

b. San Carlos Municipal Code (Section 13.04)

Chapter 13.04 of the San Carlos Municipal Code establishes the procedures for sewer connection permits. This chapter also sets the fees for sewer connections and sets sewage treatment charges, as well prohibits discharges into sewers.

2. Existing Conditions

The wastewater collection within the San Carlos city limit and SOI is provided by the San Carlos Public Works Department. Wastewater is then pumped to the South Bayside System Authority's (SBSA) regional wastewater treatment facility.

a. City of San Carlos Public Works Department

The City of San Carlos Public Works Department operates and maintains the wastewater collection system. There are 106 miles of sewer in San Carlos, with sewer pipes ranging in size from 5 inches to 27 inches, and 2,789 junction boxes. A 1988 Inflow Study recommended improvements to the sewer system, most of which have been completed. Existing problems in the system include the high rate of sanitary sewer overflows (SSO), of which there were

²¹ California Health & Safety Code, Div. 6, Pt. 1, §§ 6400-6830: Derived from 1923:250:498. "Sanitary District Act of 1923."

65 in 2008. The primary causes of SSOs were roots, grease and debris.²² Currently, the City is studying the operation and maintenance of the sewer system and is looking into a computerized maintenance system and a root control process.

The San Carlos sewer collection system also serves several outside sewer districts: Devonshire Canyon, Scenic Heights, Emerald Lake and the unincorporated portion of the Harbor Industrial Area. The average dry weather flow (ADWF) for San Carlos is 2.6 MGD and the peak dry weather flow (PDWF) is 5.8 MGD. The planning horizon dry weather flow for 2030 is 2.9 ADWF and 5.8 PDWF. The maximum allocated capacity flow for San Carlos is 4.4 MGD for ADWF and 14.3 MGD for peak wet water flow.²³ Therefore, there is enough capacity for the sewer to meet Regional Water Quality Control Board Standards.²⁴

b. South Bayside System Authority

Wastewater collected within San Carlos is treated at a plant operated jointly by the South Bayside Sewer Authority (SBSA), a Joint Powers Authority managed by one elected official each from Belmont, Redwood City, San Carlos and the West Bay Sanitation District. The SBSA provides wastewater treatment for Belmont, Redwood City, San Carlos, Menlo Park, Portola Valley, and portions of Atherton, Woodside, East Palo Alto and San Mateo County. The SBSA serves about 200,000 people and businesses in an area that

²² Letter from Robert Weil, City Engineer/Public Works Director, to Bruce H. Wolfe, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, "Annual Report of Sanitary Sewer System Overflows for Calendar Year 2008," March 5, 2009, page 2.

²³ Winzler & Kelly, 2009, *SBSA Conveyance System Master Plan Project*, pages 3 and 9.

²⁴ Weil, Robert. Public Works Director/City Engineer, City of San Carlos. Personal communication with Alejandro Huerta, DC&E, March 26, 2009.

covers about 45 square miles.²⁵ The capacity of the plant is 29 MGD. Of this total, the City of San Carlos is allocated a total treatment capacity of 4.47 MGD.²⁶ Wastewater from San Carlos is delivered to a pump station, and is then pumped to the SBSA treatment plant located in Redwood Shores.

The San Carlos flow wastewater projection for residential and existing non-residential uses by the year 2035 is 3.16 MGD. The projected demand for non-residential uses is 0.157 MGD.²⁷ Wastewater flows in San Carlos have decreased in the last 13 years by 25 percent due to water conservation efforts and the reduction of non-resident employees from the economic decline of the early 2000s.

The SBSA facility is now over 25 years old. To maintain capacity, the SBSA has launched a \$339 million, 10-year Capital Improvement Program to upgrade its facilities, including improving the sewer main. In addition, the Capital Improvement Program will assure compliance with new environmental standards.²⁸

In 2000, the SBSA produced a small quantity of recycled water for use at several landscaping sites in Redwood Shores. There is currently no supply of recycled water for the City of San Carlos.²⁹ However, Redwood City is near to completing a recycled water distribution facility that is designed for the distribution of recycled water to Redwood City and neighboring agencies.

²⁵ South Bayside Sewer Authority website, Wastewater Treatment, [http://www.sbsa.org/SBSA/html/WastewaterTreatment, htm](http://www.sbsa.org/SBSA/html/WastewaterTreatment.htm), accessed on March 17, 2009.

²⁶ Child, Dan. Manager, Southside Bayside System Authority. Personal email communication with Alejandro Huerta, DC&E, March 17, 2009.

²⁷ Whitley Burchett & Associates, 2008, "Technical Memorandum: SBSA Service Area Wastewater Flow Projections," pages 1 to 2 and 6 to 10.

²⁸ South Bayside System Authority, 2008, "Press Advisory: SBSA Announces \$339 million, 10-year Capital Improvement Program."

²⁹ Child, Dan. Manager, South Bayside System Authority. Personal email communication with Alejandro Huerta, DC&E, March 17, 2009.

San Carlos would have to store and distribute recycled water it wishes to receive from Redwood City.³⁰

3. Standards of Significance

The Draft 2030 General Plan and the CAP would have a significant impact on wastewater service if it would:

- a. Exceed wastewater treatment requirements of the San Francisco Regional Water Quality Control Board.
- b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- c. Have insufficient wastewater treatment capacity available to serve the project's projected demand in addition to existing demand.

4. Draft 2030 General Plan Impact Discussion

The wastewater impact discussion considers the Draft 2030 General Plan growth projections, which include 1,436 new residential units by 2030.

a. RWQCB Wastewater Treatment Requirements

As stated above, the SBSA will assure compliance with environmental standards as part of its Capital Improvement Program. In addition, the SBSA treatment facility will always meet or exceed the requirements placed on it by the RWQCB for discharge to the San Francisco Bay.³¹ As such, impacts to wastewater treatment requirements would be *less than significant*.

b. Wastewater Facilities Construction or Expansion

The capacity of the SBSA wastewater treatment plant is 29 MGD. Of this total, the City of San Carlos is allocated a total treatment capacity of 4.47 MGD. The San Carlos flow wastewater projection for residential and existing non-residential uses by the year 2030 is 3.03 MGD. As such, there is no

³⁰ Ezell, Justin. Public Works Superintendent, City of Redwood City. Personal email communication with Carey Stone, DC&E, April 16, 2009.

³¹ Child, Dan. Manager, South Bayside System Authority. Personal email communication with Alejandro Huerta, DC&E, May 21, 2009.

anticipated need for additional wastewater facilities in San Carlos and impacts to San Carlos' wastewater facilities are less than significant.

As stated above, the SBSA is upgrading and improving existing facilities as it starts its Capital Improvement Program. The wastewater pipe system is planned to be replaced due to its age and condition. The new pipe will be designed for anticipated peak flows over the coming 25 years. As such, impacts to the SBSA's wastewater facilities are less than significant. None of these planned improvements are as a result of the Draft 2030 General Plan. Any improvements or expansions to facilities related to aging infrastructure and regional growth would undergo separate environmental review pursuant to CEQA.

As a result, *less-than-significant* impacts on the provision of wastewater collection and treatment services are expected from implementation of the Draft 2030 General Plan.

c. Wastewater Treatment Capacity

The projected 2035 (there is no 2030 projection) wastewater flow for San Carlos is 3.16 MGD, while the total capacity allocated to San Carlos is 4.47 MGD.³² As such, implementation of the Draft 2030 General Plan would not require additional wastewater treatment capacity. To continue to decrease the amount of wastewater treatment capacity needed, Goal EM-5 of the Environmental Management Plan of the Draft 2030 General Plan includes policies which reduce the discharge of toxic materials. Policy EM-5.1, for example, aims to reduce the discharge of toxic materials into the City's sanitary sewer and stormwater collection system by promoting the use of Best Management Practices. Policy EM-5.2 calls for the use of less toxic household and commercial cleaning materials which might need wastewater treatment. Given the policies described above, the Draft 2030 General Plan would minimize

³² Whitley Burchett & Associates, 2008, "Technical Memorandum: SBSA Service Area Wastewater Flow Projections," pages 9 to 10.

impacts to wastewater treatment capacity. Therefore, impacts to wastewater treatment capacity would be *less than significant*.

5. Climate Action Plan Project Impacts

The CAP would not impact wastewater treatment requirements, require the construction of new facilities or affect wastewater treatment capacity. Therefore, the proposed CAP would have *no impact* to wastewater services in San Carlos.

6. Cumulative Impacts

There are no planned wastewater treatment system improvements because the projected regional growth at buildout of the Draft 2030 General Plan would not result in increased demand for wastewater treatment. A comparison of total flow projections for the area pump stations that serve the West Bay Sanitary District, Redwood City, Belmont and San Carlos demonstrate that the total flow projections do not exceed the baseline year. For the baseline year of 2006, the total flow for these four areas was 18.5 MGD. The projected flow for 2030 is 17.9 MGD.³³ As such, there is no need for additional wastewater treatment services from the baseline, and therefore there is a *less-than-significant* cumulative impact.

7. Impacts and Mitigation Measures

Since there are no significant wastewater impacts as a result of the Draft 2030 General Plan, no mitigation measures are required.

C. Stormwater

The following describes current stormwater regulations conditions and potential impacts on stormwater services from the Draft 2030 General Plan and the CAP.

³³ Winzler & Kelly, 2009, *Technical Memo No. 2-Draft: Design Flow Rates and Design Criteria*, Appendix G: Comparison with Previous Studies.

1. Regulatory Framework

As mentioned in Chapter 4.7, Hydrology and Water Quality, the SWRCB is responsible for implementing the Clean Water Act (CWA) and does so through issuing National Pollutant Discharge Elimination System (NPDES) permits to cities and counties through its RWQCBs. Federal regulations allow two permitting options for stormwater discharges: individual permits and general permits. The California SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0004-DWQ) for Small Municipal Separate Storm Sewer System (MS4s) operators covered under the CWA to efficiently regulate stormwater discharges under a single permit. Permittees must meet the requirements in Provision D of the general permit, which require development and implementation of a Stormwater Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. The City of San Carlos is considered a permittee under the statewide general permit.

2. Existing Conditions

The City of San Carlos maintains all stormwater facilities within the city. There are approximately 27 miles of closed conduits in the city that receive stormwater drainage with 680 inlets. The drainage system dates to the early twentieth century, and as such does not meet today's design standards.³⁴ Repairs are completed as needed. Developers or property owners are responsible for adding extensions to the stormwater system when new development occurs.

There are two watersheds in San Carlos: the Pulgas Creek Watershed and the Cordilleras Creek Watershed. The creeks within the watersheds and the City's SOI that receive stormwater include Belmont, Pulgas, Brittan and Cordilleras Creeks. For more information on the features and water quality of the watersheds see Sections B.1.d and D.1.c. of the Environmental Management Element of the Draft 2030 General Plan. These creeks total seven miles in length, are unlined and subject to erosion, and eventually empty into the

San Francisco Bay. The Pulgas and Brittan Creeks are culverted from near Elm Street to Old County Road. The eastern portions of the channels are subject to tidal influence from the San Francisco Bay. These portions of the creeks do not have sufficient capacity to pass large flows from high tides or less-than-severe rainfall. Flooding in the city also results from undersized hydraulic controls upstream. There are no planned upgrades to the creeks. The City of San Carlos operates approximately 6,500 linear feet of flood control channel with a capacity of over 500 cubic feet.³⁵

3. Standards of Significance

The Draft 2030 General Plan and the CAP would have a significant impact on stormwater service if it would:

- a. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4. Draft 2030 General Plan Impact Discussion

As development would occur as permitted under the Draft 2030 General Plan, there would be a need for additional stormwater drainage facilities to collect and dispose of runoff from urban uses. However, since most new development would be redevelopment, there would not be a substantial increase in impervious surfaces. In addition, the Environmental Management Element of the Draft 2030 General Plan contains policies to ensure that adequate stormwater practices are used in new development. Goal EM-5 encourages a high level of domestic water quality, promotion of water conservation and reduction of toxics in run-off for the stormwater system. Policy EM-5.7 encourages site designs that manage the quantity and quality of stormwater runoff. Actions EM-5.1 through EM-5.3 implement the aforementioned goal and policy. Action EM-5.1 directs the City to consider amending the Zoning

³⁴ Weil, Robert. Public Works Director/City Engineer, City of San Carlos. Personal communication with Alejandro Huerta, DC&E, March 26, 2009.

³⁵ Weil, Robert. Public Works Director/City Engineer, City of San Carlos. Personal communication with Alejandro Huerta, DC&E, March 26, 2009.

Code to maximize permeable surfaces for new development. Action EM-5.2 calls for the use of bioswales and other bio-filtration systems as applicable to cleanse runoff before it enters creeks and the San Francisco Bay. Bioswales would also reduce runoff into the stormwater system. As a result of these policies and actions there would be a *less-than-significant* impact on the provision of stormwater collection.

5. Climate Action Plan Project Impacts

The CAP would not result in the construction of new stormwater drainage facilities. Therefore, the proposed CAP would have *no impact* to stormwater in San Carlos.

6. Cumulative Impacts

San Mateo County's Watershed Protection Program Maintenance Standards would assure that any regional development would reduce impacts to sensitive resources. San Carlos is built-out, and new development would be redevelopment. In addition, under the Draft 2030 General Plan, new development will be subject to more stringent stormwater policies and regulations than previous developments. Therefore, there would not be an increase in impervious surfaces. Consequently, storm drainage rates would not increase. As such, San Carlos would not contribute to a cumulative impact, and there would be a *less-than-significant* cumulative impact to stormwater.

7. Impacts and Mitigation Measures

Since there are no significant impacts related to stormwater as a result of the Draft 2030 General Plan, no mitigation measures are required.

D. Solid Waste

The following section describes current solid waste regulations, conditions and potential impacts on solid waste of the Draft 2030 General Plan.

1. Regulatory Framework

This section summarizes existing State and local agencies, policies and regulations that apply to solid waste services being analyzed in this section.

a. State Regulations

i. *California Integrated Waste Management Act*

California's Integrated Waste Management Act (IWMA) of 1989 (AB 939) set a requirement for Cities and Counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. To help achieve this, the Act required that each City and County prepare and submit a Source Reduction and Recycling Element (SRRE). AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity.

As part of the California Integrated Waste Management Board's (CIWMB) Zero Waste Campaign, regulations affect what common household items can be placed in the trash. As of February 2006, household materials, including, but not limited to, fluorescent lamps and tubes, batteries, electronic devices and thermostats that contain mercury are no longer permitted in the trash.³⁶

In compliance with the IWMA described above, the City of San Carlos has implemented its SRRE's programs, including residential curbside, residential drop-off, residential buy-back, commercial on-site pickup and telephone book and Christmas tree recycling.³⁷

ii. *California Solid Waste Reuse and Recycling Access Act of 1991*

The California Solid Waste Reuse and Recycling Access Act requires areas to be set aside for collecting and loading recyclable materials in development projects. The Act requires the CIWMB to develop a model ordinance for adoption by any local agency relating to adequate areas for the collection and loading of recyclable materials as part of development projects. Local agen-

³⁶ California Integrated Waste Management Board's Zero Waste Campaign's website. <http://www.zerowaste.ca.gov/>, accessed March 5, 2009.

³⁷ California Integrated Waste Management Board, 1999, Agenda Item 6.

cies are required to adopt the model, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects. The intent of the Act is to require development projects to include advanced planning that focuses on solid waste issues at the beginning of a project and implement an adequate recycling program for the development project.

b. Countywide Integrated Waste Management Plan (CoIWMP)

The CoIWMP is mandated by State law under AB 939. The purpose of the CoIWMP is to describe local waste diversion and disposal conditions and lay out realistic programs to achieve the waste diversion goals outlined in AB 939. The CoIWMP serves as the primary tool for designing waste reduction programs that are countywide in scope. The Plan also addresses the county's landfill needs in a comprehensive way. The CoIWMP's most recent five-year review was completed and approved on August 17-18, 2004.³⁸

2. Existing Conditions

a. Waste Collection Services

Solid waste and recyclables are collected within the city by a provider contracted through the South Bay Waste Management Authority (SBWMA). This is a joint powers agreement with 12 member agencies, including the City of San Carlos. SBWMA is currently in the selection process for a new contract to begin on January 1, 2011.³⁹ The selected provider will be a recycling and solid waste services management company that provides residential and commercial collection, transfer, recycling and composting. In addition, the provider will be responsible for household hazardous waste disposal. In March 2009, the City began a food scraps program that works in concert with the yard waste recycling program. It is an innovative program in that it en-

³⁸ Springer, Kim. Staff, San Mateo County Recycleworks. Personal communication with Agnes Chan, DC&E, June 19, 2009.

³⁹ San Carlos Selects Norcal for Solid Waste Collection Starting in 2011, http://www.cityofsancarlos.org/gov/depts/cm/green_programs_n_climate_protection/san_carlos_selects_norcal_for_solid_waste_collection_starting_in_2011.asp, accessed on March 18, 2009.

courages the recycling of household food scraps, including paper products contaminated with food waste, that have previously been omitted from the recycling chain. The Feed the Pail, Feed the Planet food waste program is an integral part of the SBWMA's goal of reducing the amount of household waste that is sent to the landfill.

In San Carlos, acceptable residential recyclable material includes plant materials, mixed paper, plastic (#1-7), aluminum and bi-metal cans, glass, used motor oil, batteries and cell phones. Commercial recycling includes plastic, glass, cardboard, mixed office paper, food scraps and plant materials. In 2006, the City of San Carlos collected 2,732 tons of recyclable material. San Carlos recently participated in a pilot program to collect household batteries and cell phones. This program is now being expanded to other cities within the jurisdiction of SBWMA.

b. Transfer Station

San Carlos' solid waste and recyclables are initially taken to the Shoreway Recycling and Disposal Center (SRDC), which receives about 150 tons per day (five-day average) of solid waste and 62 tons per day of recyclables from the city. The SRDC is run by SBWMA and is located on the border of San Carlos and Redwood City. The SRDC is a solid waste transfer station and material recovery facility with a permitted operating capacity of 3,000 tons per day.⁴⁰

There are plans to reconfigure the transfer station and build a new recycling facility capable of handling a single stream recycling program for San Carlos and the 11 partner agencies that use this facility.⁴¹ This reconfiguration will increase the level of recycling in San Carlos and help the City meet its 50 percent recycling goal under AB 939.

⁴⁰ Gans, Hilary. Facility Operations Contract Manager, SBWMA. Personal email communication with Alejandro Huerta, DC&E, March 3, 2009.

⁴¹ Future Plans, <http://www.rethinkwaste.org/shoreway-facility-future-plans>, accessed on March 18, 2009.

c. Landfills

The majority of the solid waste generated in San Carlos is transported to the Ox Mountain Landfill near Half Moon Bay. The landfill, owned and operated by Allied Waste, is expected to reach capacity in 2028.⁴² In 2007 the landfill received 175,872 tons of solid waste per year, of which 8,248 tons were from San Carlos.⁴³

As of 2004, San Carlos was unable to reach the 50 percent diversion goal required by the IWMA. According to the San Mateo Recycle Works program, the diversion rate increased to 42 percent in 2005 and 47 percent in 2007.⁴⁴ The City's enhanced efforts to enforce a construction and demolition Ordinance are expected to improve the diversion rate in 2009 by 60 percent.

3. Standards of Significance

The Draft 2030 General Plan and the CAP would have a significant impact on solid waste service if it would:

- a. Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- b. Not comply with federal, State and local statutes and regulations related to solid waste and recycling.

4. Draft 2030 General Plan Impact Discussion

a. Landfill Capacity

As the City of San Carlos grows under the Draft 2030 General Plan, there would be an increased generation of solid waste. The Ox Mountain Landfill is not expected to reach capacity until 2028. However, since the San Carlos only contributes a small portion of the total amount of solid waste disposed

⁴² Boyd, Evan. General Manager, Allied Waste. Personal communication with Alejandro Huerta, DC&E, May 26, 2009.

⁴³ Gans, Hilary. Facility Operations Contract Manager, SBWMA. Personal email communication with Alejandro Huerta, DC&E, March 3, 2009.

⁴⁴ Diversion Rates of San Mateo County Jurisdictions, http://www.recyclworks.org/div_rates/html, accessed on March 18, 2009.

at the landfill, implementation of the Draft 2030 General Plan would not be significant. Moreover, Goal EM-12 in the Environmental Management Element would reduce the need for landfill capacity by reducing solid waste disposal and increasing recycling. Please refer to the next section for a discussion of General Plan and the CAP goals, policies and actions also addressing waste reduction. Since the City is striving to reduce waste through increased resource recovery policies and actions through the CAP and General Plan, there would be a *less-than-significant* impact with regard to solid waste.

b. Solid Waste and Recycling Regulations

The Draft 2030 General Plan includes a goal, policies and actions to help meet the State-mandated 50 percent recycling goal and to encourage recycling to minimize the amount of solid waste generated by residents and businesses. Goal EM-12 in the Environmental Management Element calls for reducing the overall generation of solid waste and increasing recycling. Policy EM-12.1 of that Element calls for the City to work with local waste management authority to increase community diversion of solid waste to meet or exceed the targeted rate of the CAP. Policy EM-12.2 would minimize City government waste by expanding reduction, recycling and composting programs and practicing reuse. Policy EM-12.3 encourages the public and private sectors to use reusable, returnable, recyclable, environmentally-friendly products and repairable goods through incentives, educational displays and activities, as well as City purchasing policies and practices. Actions EM-12.1 through 12.8 set out measures to implement the aforementioned policies. Action EM-12.1 implements CAP measure to reduce solid waste and increase recycling and reuse. Action EM-12.2 considers incentives for households and businesses to reduce the volume of solid waste. Action EM-12.3 would require adequate recycling in all new development. Action EM-12.4 would encourage recycling programs in existing multi-family buildings. Action EM-12.5 encourages building deconstruction instead of demolition, as well as requiring a construction and demolition debris waste plan. Action EM-12.6 encourages the use of recycled pavement and permeable products. Action EM-12.7 supports the commercial food scraps and organics recycling program. Finally, Action EM-12.8 evaluates options for increasing ease of properly disposing household

hazardous waste. Policy EM-12.2 also calls for the City to minimize government waste by expanding reduction, recycling and composting programs and practicing reuse.

In addition to the policies in the General Plan, the CAP contains policies that would reduce solid waste and increase recycling and reuse. To help implement the policies of the CAP, Policy EM-12.1 of the Element would require the City to work with waste management authorities to increase community diversion of solid waste that meets or exceeds the targeted rate in the CAP. As stated above, Action 12.1 in the Element requires that the City implement the CAP's policies to increase recycling and reuse. Given the goal, policies and actions described above, the Draft 2030 General Plan would minimize potential increase in solid waste generation and would therefore comply with State and local statutes and regulations related to solid waste and recycling. Therefore, this impact would be *less than significant*.

5. Climate Action Plan Project Impacts

The CAP would not impact landfills and would comply with local, State and federal laws regulating solid waste and recycling. Additionally, Goals of the Solid Waste section in the CAP promote zero waste, recycling and composting, call for the establishment of an Environmentally Preferable Purchasing Policy and call for increasing waste diversion by at least 1 percent per year. Therefore, the proposed CAP would have *no impact* to solid waste services in San Carlos.

6. Cumulative Impacts

As discussed above, the Ox Mountain Landfill currently has capacity until 2028. While there are currently no plans for expansion of the landfill, it is anticipated that there would be countywide expansion plans before the landfill reaches capacity in 2028. In addition, since the region is mostly developed, it is not anticipated that there would be significant population growth to impact solid waste services. Finally, recycling services are likely to decrease the need for solid waste services in the County. Therefore, there would be a *less-than-significant* cumulative impact to solid waste disposal needs.

7. Impacts and Mitigation Measures

Since there are no significant impacts related to solid waste generation and landfill capacity as a result of the Draft 2030 General Plan, no mitigation measures are required.

E. Energy

The following section describes current energy regulations, conditions and potential impacts on energy of the Draft 2030 General Plan and the CAP.

1. Regulatory Framework

The Energy Efficiency Standards for Residential and Nonresidential Buildings, of Title 24, Part 6, of the California Code of Regulations (Title 24), were established in 1978. The State has adopted the Title 24 energy standards in response to a legislative mandate to reduce California's energy consumption. Title 24 requirements address a wide range of design and performance features of new development, including, but not limited to, heating and cooling, shading and lighting.

2. Existing Conditions

The energy shortages and accompanying high utility rates of the 1970s and the year 2000, as well as the projected continued rise of the price of crude oil, have led to a heightened awareness of the need for energy conservation techniques as a means of saving money and natural resources. However, the benefits of energy conservation go well beyond financial savings for individual consumers. For example, the combustion of fossil fuels to produce heat or electricity, or to power internal combustion engines, has also been linked to poor air quality in the Peninsula, global warming and negative impacts on crops.

In San Carlos, energy conservation can be achieved from reducing electricity and private automobile use, encouraging alternative energy sources, efficiently siting buildings for optimal sun exposure and implementing land use

and transportation policies that encourage fewer and shorter vehicle trips. Energy efficiency is promoted in new development in San Carlos by enforcing the State's Title 24 building codes on energy efficiency. Additional energy efficiency can be achieved by requiring that new residential development meet the State of California's Energy Star.

In addition, a community based group in San Carlos, San Carlos Green, promotes sustainable practices. Example programs include the Bike Buddy program and the San Mateo County Green Business Pilot Program.

Perhaps most importantly, the CAP targets ways to reduce energy consumption, such as expanding energy saving opportunities to businesses and improving residential efficiency.⁴⁵

3. Standards of Significance

The Draft 2030 General Plan and the CAP would have a significant impact on energy consumption if it would:

- a. Result in the wasteful, inefficient and unnecessary consumption of energy during construction or operation.

4. Draft 2030 General Plan Impact Discussion

Implementation of the Draft 2030 General Plan would result in the construction of additional urban uses that would utilize additional energy, both for the initial construction, as well as for the continued operation.

The Draft 2030 General Plan includes a goal, policies and actions to help reduce the overall consumption of electricity and natural gas by new development. Goal EM-9 in the Environmental Management Element calls for a reduction in citywide energy consumption. Policy EM-9.1 of the Element would provide assistance and support efforts for increased energy efficiency for businesses and residences through a combination of incentives and regula-

⁴⁵ City of San Carlos Planning Department and the General Plan Advisory Committee, 2009, *City of San Carlos Draft Climate Action Plan*, not yet adopted.

tions. Policy EM-9.2 supports on-site generation of energy through alternative forms of energy production such as solar panels, wind turbines and biomass facilities. Policy EM-9.3 calls for an emphasis on energy conservation in local government housing assistance programs. Policy EM-9.4 would provide outreach to residents, businesses and property owners on incentives, regulations and programs to increase energy efficiency. Policy EM-9.5 calls for all new construction and major remodels of government agency buildings to be designed with green building standards. Policy EM-9.6 encourages new private construction and major remodels to be designed to exceed green building requirements. Policy EM-9.7 would implement energy efficiency in City-owned and -operated facilities to reduce municipal energy costs and serve as a model for the community. To carry out this goal and its policies, Action EM-9.1 implements measures in the CAP intended to reduce energy consumption. Action EM-9.2 would adopt a Green Building Ordinance as called for in the CAP. Action EM-9.3 would review and amend the Zoning Code to identify and reduce barriers to the establishment of on-site energy generators. Action EM-9.4 calls for an integration of energy cost reduction measures into the City's facilities where feasible. Action EM-9.5 would encourage energy efficiency audits and upgrades of facilities to which the City provides funding, including the fire department and sewage service. Action EM-9.6 calls for the periodic investigation of funding resources available to assist the City in energy conservation or on-site energy production at City facilities. Policies related to reducing water usage and increasing water efficiency also help reduce energy consumption. Policy EM-5.3 calls for conservation and efficient use of water in new and existing residences and commercial and industrial consumers. Policy EM-5.4 encourages use of drought-tolerant plant species and efficient watering techniques for all City landscaping.

While new development will result in the increased demand for electricity and natural gas, implementation of the policies contained in the Draft 2030 General Plan would not result in the wasteful, inefficient and unnecessary consumption of energy during construction or operation. Therefore, impacts related to the wasteful, inefficient and unnecessary consumption of energy during construction or operation would be *less than significant*.

5. Climate Action Plan Project Impacts

The CAP would not result in increased energy use. Additionally, Goals in Energy Section of the CAP call for increased energy efficiency. Therefore, the proposed CAP would have *no impact* to energy services in San Carlos.

6. Cumulative Impacts

As growth occurs throughout the region, there will be an increased demand for electricity and natural gas. As discussed above, San Carlos would avoid a significant impact associated with the wasteful use of energy by implementing Draft 2030 General Plan and CAP goals and policies. Similarly, other jurisdictions in the region are required to meet State regulations in regards to energy conservation, including Title 24. As a result, there would not be a significant cumulative wasteful, inefficient or unnecessary use of energy.

7. Impacts and Mitigation Measures

Since there are no significant impacts related to energy usage as a result of the Draft 2030 General Plan, no mitigation measures are required.