

M. UTILITIES AND INFRASTRUCTURE

This section describes major utilities and service systems serving the project area and evaluates the impacts that may result from the implementation of *Strategy 2000*. Mitigation measures are recommended, where appropriate.

1. Setting

The following discussion of existing utilities and infrastructure service systems covers the following topics: water supply; sanitary sewer service and wastewater treatment; storm drainage; and solid waste. Electricity and natural gas is addressed below in Section N, Energy, of this chapter. The information presented was gathered from a variety of sources, including utility operators and service providers.

a. Water Supply. A description of existing conditions related to water sources, storage, and retail providers; conservation; and recycling is presented below.

(1) Water Sources, Storage, and Retail Providers. Potable water in the study area derives from a variety of sources and is managed and delivered by several entities. A portion of San Jose's drinking water is supplied via a local water supply system in which runoff is collected in reservoirs and used to recharge the ground water basin via streams and ponds. Ten reservoirs, with a total storage capacity of 169,415 acre-feet (AF), store runoff from local watersheds. Local resources are not sufficient to meet all of the City's water supply needs. As a result, the Santa Clara Valley Water District (SCVWD) and other water retailers import about one half of the water consumed within the City, mainly from three sources: the State Water Project via the South Bay Aqueduct; the San Francisco Water Department's Hetch Hetchy Aqueduct; and the San Felipe Division of the Federal Central Valley Project.

The SCVWD owns and operates an extensive distribution system and three water treatment plants: Penitencia (42 million gallons/day (mgd) capacity), Rinconada (75 mgd capacity), and Santa Teresa (100 mgd capacity).¹ These treatment plants recharge and treat both local and imported water. The total amount of water available to the SCVWD is approximately 646,900 AF during wet periods and 344,400 AF during critically dry periods.² The projected district-wide water demand for the year 2020 ranges between 350,000 AF and 500,000 AF.³ The *Integrated Water Resources Plan* estimates a 100,000 AF shortfall by the year 2020 and has developed strategies to fill the gap created by this shortfall through conservation, water banking, non-potable water recycling, demand management, and long-term transfers. Water conservation and recycling programs are described more fully below.

The water system for Downtown San Jose is owned and operated by the San Jose Water Company. The Downtown average daily demand is 29 million gallons per day (mgd), with a projected demand of 34 mgd for year 2020. The existing water system to the project area consists of lines of various sizes (from three to 12 inches in diameter) within the public right-of-way.⁴

¹ Santa Clara Valley Water District, 2001. *Urban Water Management Plan*, April.

² Santa Clara Valley Water District, 1999. *Integrated Water Resources Plan*, June.

³ Ibid.

⁴ Asahina, Michael, 2003. Engineer, San Jose Water Company, personal communication with LSA Associates, Inc. July 29.

(2) **Water Conservation.** The City's water conservation and water reclamation programs are intended to minimize flows to the sanitary sewer and sewage treatment systems, and to meet future water needs. Components of the City's active water conservation program include: limited landscape watering hours; restrictions on the use of potable water for construction purposes; ultra-low flow toilet incentives; a showerhead retrofit program; landscape ordinances for non-residential new construction; commercial/industrial water audits; financial incentives for commercial/industrial conservation; water use prohibitions; and a ban on cleaning vehicles without an automatic shut-off valve.

(3) **Water Recycling.** The City of San Jose administers the South Bay Water Recycling (SBWR) program, a long-term program for the cities of Milpitas, San Jose, and Santa Clara created to bring a reliable, sustainable, and drought-proof supply of water to the South Bay area. The recycled water system includes pump stations, reservoirs, and extensive pipelines. Wastewater from the sanitary sewer system travels to the San Jose/Santa Clara Water Pollution Control Plant (WPCP) for treatment. During summer months, about 10 percent of the wastewater flowing to the treatment plant is recycled and pumped through pipelines to over 400 connections to irrigate golf courses, parks, schoolyards and agricultural lands, and for industrial purposes and cooling towers. Fiscal year 2001-2002 estimates for recycled water production were 6,000 AF/year.⁵ Without any large infrastructural improvements, the system has the capacity to produce 11,000 AF/year.

(4) **General Plan Policies.** The San Jose General Plan contains goals and policies to reduce the potential for impacts to the City's surface and groundwater resources and further encourages a reduction in water consumption and implementation of water conservation practices.

- Natural Resources, Water Resources Policy 1: The City, in cooperation with the Santa Clara Valley Water District, should restrict or carefully regulate, public and private development in watershed areas, especially those necessary for the effective functioning of reservoirs, ponds, and streams, and for the prevention of excessive siltation.
- Natural Resources, Water Resources Policy 2: Water resources should be utilized in a manner which does not deplete the supply of surface or ground water, and efforts to conserve and reclaim water supplies, both local and imported, should be encouraged.
- Natural Resources, Water Resources Policy 3: The City should encourage the Santa Clara Valley Water District to restrict public access and recreational uses on water-related lands when water quality could be degraded.
- Natural Resources, Water Resources Policy 5: The City should protect groundwater recharge areas, particularly creeks and creeksides, and riparian corridors.
- Natural Resources, Water Resources Policy 10: The City should encourage a more efficient use of water by promoting water conservation techniques and the use of water-saving devices.
- Natural Resources, Water Resources Policy 11: The City should promote the use of reclaimed water when feasible, particularly for industrial uses, for irrigation, and in groundwater recharge areas.

b. Sanitary Sewer Service and Wastewater Treatment. The San Jose/Santa Clara Water Pollution Control Plant (Plant) provides wastewater treatment for the project area. The Plant is a regional facility located in North San Jose, and provides tertiary treatment of wastewater from several

⁵ Durkin, Jennifer, 2003. Associate Environmental Services Specialist, South Bay Water Recycling Program, personal communication with LSA Associates, Inc. March.

surrounding cities and sanitation districts. The cities of San Jose and Santa Clara jointly own the facility, but the City of San Jose operates and maintains the Plant.

The Plant is rated for a treatment capacity of 167 million gallons per day (mgd). The average dry weather influent flow (or peak week flow) is determined as the highest average flow during any five-weekday period between the months of June and October. For 2002, peak week flow was 118.27 mgd and occurred the week of June 10th through June 14th. The Plant's treatment capacity of 167 mgd is allocated between the several agencies served and two co-owners. The total capacity allotted to the City of San Jose is approximately 106.39 mgd.

In the dry weather period of May through October, the Plant is required by the San Francisco Bay Regional Water Quality Control Board (RWQCB) to discharge no more than 120 mgd into the South San Francisco Bay. The Plant has had programs in place since 1991 to reduce and maintain flows below 120 mgd. For the last five years, the Plant has been in compliance with this requirement.⁶ The average dry weather effluent flow for 2002 was 104 mgd. Long-term plans to remain in compliance with the 120-mgd requirement include ongoing water conservation and water recycling, as described above.

The existing sanitary sewer collection system which serves the project site consists of a system of pipelines, consisting of lateral lines and interconnected main lines in the public right-of-way, draining to treatment at the Plant. Wastewater collection is maintained by the Department of Transportation. The treatment of wastewater is under the authority of the Department of Environmental Services. The General Plan provides standards to ensure that sanitary sewer lines maintain a Level of Service (LOS) D, which represents a free flow of wastewater sufficient to provide "back up" problems.

The San Jose General Plan contains policies related to wastewater treatment, as follows.

- Services and Facilities, Sewage Treatment, Policy 7: The City should monitor and regulate growth so that the cumulative sewage treatment demand of all development can be accommodated by San Jose's share of the treatment capacity of the San Jose/Santa Clara Water Pollution Control Plant.
- Services and Facilities, Sewage Treatment, Policy 8: The operation of the Water Pollution Control Plant should comply with the water quality standards for the South San Francisco Bay established by the Regional Water Quality Control Board and implemented through NPDES (National Pollutant Discharge Elimination System) permits.
- Services and Facilities, Sewage Treatment, Policy 9: The City should continue to encourage water conservation programs which result in reduced demand for sewage treatment capacity.

c. Storm Drainage. The City of San Jose's Departments of Transportation and Public Works are responsible for the development, operation, and maintenance of the storm water system throughout the City. The system collects runoff water from the street and carries it to the creeks and rivers that ultimately drain into the San Francisco Bay. Storm water is not treated before being released into the Bay. In 1997, the SCVWD, Santa Clara County, and 13 cities adopted the *Urban Runoff Management Plan*, intended to reduce polluted runoff entering local waterways.

⁶ Terrasas, John, 2001. Water Pollution Control Division, personal communication with LSA Associates, Inc., July 27.

The existing storm drain lines within the project area convey storm runoff adequately, although minor flooding can occur. The City's policy regarding storm drainage is to design new projects to minimize flooding on public streets and to minimize property damage from storm water.

The Guadalupe River is historically prone to flooding. The Guadalupe River Flood Control project, scheduled for completion in December 2004, will extend through the project area from I-280 to I-880. It has been designed to keep flows within the existing channel and an adjacent overflow channel, eliminating the 100-year flood hazards currently present along that segment of the river. Flooding and other hydrological conditions are further described in Section J, Hydrology and Water Quality in this chapter.

The San Jose General Plan contains policies related to storm drainage, as follows.

- Natural Resources, Water Resources Policy 6: When new development is proposed in areas where storm-water runoff will be directed into creeks upstream from groundwater recharge facilities, the potential for surface water and groundwater contamination should be assessed and appropriate preventative measures should be recommended.
- Natural Resources, Water Resources Policy 8: The City should establish nonpoint source pollution control measures and programs to adequately control the discharge of pollutants into the City's storm sewers.
- Natural Resources, Water Resources Policy 9: The City should take a proactive role in the implementation of the Santa Clara Valley Nonpoint Source Pollution Control Program, as well as implementation of the City's local nonpoint source control and storm water management program.
- Natural Resources, Water Resources Policy 12: For all new discretionary development permits for projects incorporating large paved areas or other hard surfaces (e.g., building roofs), or major expansion of a building or use, the City should require specific construction and post-construction measures to control the quantity and improve the water quality of urban runoff.

d. Solid Waste. Norcal Waste Systems and Waste Management of Santa Clara County, both privately-owned companies, provide residential solid waste collection services in Downtown San Jose. Multi-family residential solid waste and recycling collection services in San Jose are provided by Green Team. A variety of other private waste haulers, including Browning-Ferris Industries, provide non-residential solid waste collection services in the Downtown area.

According to the Source Reduction and Recycling Element prepared for the City of San Jose and the County-wide Integrated Waste Management Plan, there is sufficient remaining landfill capacity for Santa Clara County for approximately 23 years. Four landfills receive solid waste from San Jose: Guadalupe, Kirby Canyon, Newby Island, and Zanker Road, the latter of which also accepts recyclable construction and demolition waste, self-haul loads, and yard trimmings. Currently, the City contracts with International Disposal Corporation for residential solid waste disposal at the Newby Island Landfill, which has a permitted capacity of 50.8 million cubic yards and an estimated life of approximately 18 years. San Jose disposes of approximately 400,000 tons of garbage per year at Newby Island. The permitted capacity and estimated life of the Guadalupe Landfill is 16.5 million cubic yards and eight years, respectively. The Kirby Landfill has a permitted capacity of 36.4 million cubic yards and an estimated life of approximately 20 years.

San Jose was required by the Integrated Waste Management Act of 1989 (AB 939) to divert 50 percent of its solid waste from landfills by the end of calendar year 2000 through the implementation of various strategies, including source reduction, composting, recycling, and yard waste programs.

Using a combination of financial incentives, public education, technical assistance, and recycling collection services, the City increased its diversion rate dramatically from 11 percent in 1990 to 44 percent in 1995. In the subsequent three years, however, the diversion rate dropped slightly to 43 percent, indicating that new initiatives were needed to achieve the mandated goal. Preliminary data for the years 1999 and 2000 show waste diversion rates of 46 percent and 53 percent, respectively.⁷ If the preliminary 2000 waste diversion rate is validated, then the City has met the mandated diversion rate.

The San Jose General Plan contains policies related to solid waste, as follows.

- Services and Facilities, Solid Waste, Goal 2: Extend the life span of existing landfills by promoting source reduction, recycling, composting and transformation of solid wastes.
- Services and Facilities, Solid Waste Capacity, Policy 1: Monitor the continued availability of long-term disposal capacity to ensure adequate solid waste disposal capacity.
- Services and Facilities, Siting Criteria for Other Solid Waste Management Facilities, Policy 20: Solid waste reduction techniques including source reduction, reuse, recycling, source separation and energy recovery, should be encouraged.

2. Impacts and Mitigation Measures

The following section evaluates impacts related to utilities and infrastructure service systems that could result from the implementation of *Strategy 2000*. The section begins with the criteria of significance, which establish the thresholds to determine whether an impact is significant, and concludes with impacts of the project and mitigation measures, if required.

a. Criteria of Significance. Implementation of the proposed project would have significant impacts on utilities and infrastructure service systems if it would have the following effects:

- Require the extension or substantial reconstruction of major water and wastewater lines to serve new development;
- Create substantial demand for water beyond the existing or planned City's water supply, requiring additional water storage capacity;
- Require new or expanded entitlements for water supplies;
- Exceed wastewater treatment requirements of the Regional Water Quality Control Board (RWQCB);
- Generate wastewater flows that would exceed the existing or planned wastewater treatment, storage and disposal capacity of the Santa Clara Valley Water District (SCVWD) wastewater treatment plant;
- Result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Require or result in the construction of a new storm water or wastewater facility or expansion of existing facilities, the construction of which could cause significant environmental effects;

⁷ California Integrated Waste Management Board, 2003. Jurisdiction Profile for City of San Jose. Website: www.ciwmb.ca.gov/profiles/juris.

- Interfere with the accomplishment of waste diversion goals mandated by the California Integrated Waste Management Act; or
- Be served by a landfill with insufficient permitted capacity.

b. Less-Than-Significant Utilities and Service Systems Impacts. Following is a summary of the less-than-significant impacts potentially resulting from implementation of *Strategy 2000*.

(1) Extension or Reconstruction of Major Lines. Because of recent improvement projects, development of the Greater Downtown area will not require substantial reconstruction or extension of major water or wastewater lines to serve new development.⁸ In specific circumstances, some infrastructure upgrades may be required for specific projects within the Greater Downtown. Under existing City programs, these upgrades would be designed and implemented when specific projects are proposed. Therefore, impacts associated with major facility expansions or extensions are not considered a significant impact.

(2) Storm Drainage. Implementation of *Strategy 2000* will consist of development and redevelopment within the Greater Downtown area, which is predominantly developed with structures in place or paved. A portion (approximately 23 acres) of the project area would be redesignated from Industrial or Commercial uses to Public Park and Open Space uses and redeveloped as such. Therefore, the amount of impermeable surfaces that is associated with storm drainage runoff, would decrease with implementation of *Strategy 2000*. Implementation of the Plan would not require or result in the construction of a new storm water or wastewater facility or expansion of existing facilities. Additionally, as specific projects are proposed, implementation of General Plan policies would ensure that sufficient storm drainage facilities are incorporated into development plans and new development or redevelopment projects would not conflict with the use, operation, or maintenance of any existing storm drain lines.

The potential for impacts related to runoff and stormwater drainage systems are evaluated in section V.L, Hydrology and Flooding in this EIR. Impacts associated with storm drainage would be less than significant and no mitigation measures are necessary.

(3) Solid Waste. As shown in Table V.M-1, approximately 107,500 pounds per day of solid waste could be generated with full build out of development proposed in *Strategy 2000*. As noted above, sufficient capacity exists at local landfills for at least another 23 years. Consistent with City policies, construction and demolition activities will be subject to recycling standards. New development would need to comply with existing General Plan policies and programs designed to reduce the amount of solid waste needing to be disposed of in landfills. New development will be designed to facilitate recycling activities.

Table V.M-1: Solid Waste Generation

	Size	Solid Waste Rate	Solid Waste Generated (lbs/day)
Office	10,000,000 s.f.	1.0 lb./100 sf/day	10,000
Retail	1,200,000 s.f.	2.5 lbs./100 sf/day	30,000
Dwelling Unit	10,000 units	5.4 lbs./day/du	54,000
Hotel Room	2,500 rooms	5.4 lbs./day/du	13,500

Source: SJW Land Company Delmas Avenue Draft EIR, 2003; LSA Associates, Inc., 2004.

⁸ Asahina, Michael, 2003. Planning Supervisor, San Jose Water Company, written communication with LSA Associates Inc., July 29.

Table V.M-2 shows the amount of recyclable material associated with development of projected residential dwelling units and hotel rooms. The amounts shown in the table are projected for diversion from landfills. As shown, implementation of *Strategy 2000* would not interfere with the accomplishment of waste diversion goals. Additionally, there is sufficient capacity at local landfills to serve future development within the Greater Downtown. No significant adverse impacts associated with solid waste disposal are expected to occur.

c. Significant Utilities and Service Systems Impacts and Mitigation Measures. The significant impacts that could result from implementation of *Strategy 2000* are discussed below.

(1) Water Supply. As shown in Table V.M-3, development associated with implementation of *Strategy 2000* would substantially increase demands upon water supply.

Impact UTIL-1: Implementation of Strategy 2000 would result in new development that could increase the demand for water, potentially resulting in the need for new or expanded water entitlements. (S)

Currently, the total amount of water available to the Santa Clara Valley Water District is approximately 646,900 AF during wet periods and 344,400 AF during critically dry periods. Water demand through year 2020 is estimated at between 350,000 and 500,000 AF. Demand during wet periods can be met, although during dry weather and drought, the City could fall short of demand by up to 100,000 AF per year.⁹

Table V.M-2: Recyclables Generation

	Recycling Rate	Recyclables Generated
Dwelling Unit	0.6 lb./day/room	6,000 lbs./day
Hotel Room	0.6 lb./day/room	1,500 lbs./day
Total	--	7,500 lbs./day

Source: SJW Land Company Delmas Avenue Site Draft EIR, 2003; LSA Associates, Inc., 2004.

Table V.M-3: Water Demand

Land Use	Rate (gpd/sf)	Square Footage	Generation (gpd)
Office	0.014	10,000,000	140,000
Retail	0.073	1,200,000	32,120
Residential	0.081	10,000,000	810,000
Hotel	0.055	2,500,000	137,500
Total	--	23,700,000	2,379,620

Source: City of San Jose Public Works Department, April 1991.

Projected residential and commercial growth associated with implementation of *Strategy 2000* could contribute to this projected water shortage. There is sufficient water storage capacity to serve new development that could occur through implementation of *Strategy 2000*. The following mitigation measure would reduce impacts relative to future water demand to a less-than-significant level:

Mitigation Measure UTIL-1: Consistent with General Plan policies related to water, the City shall review individual development proposals to ensure that the project could be adequately served by the City's water supply prior to the approval of any specific development projects. The City shall also require that all new residential and commercial development incorporates water-saving measures, including the use of reclaimed water for irrigation, and water-conserving fixtures, such as low-flow toilets and shower heads, flow-reducing aerators on sinks, and automatic shut-off faucets, in commercial buildings. All new development shall be in compliance with the Green Building Policies. (LTS)

⁹ Santa Clara Valley Water District, 1999. *Integrated Water Resources Plan*, June.

(2) Sanitary Sewer and Wastewater Treatment. Growth envisioned by *Strategy 2000* would increase sanitary sewer flows. Table V.M-4 estimates the projected increase in wastewater associated with buildout of *Strategy 2000*.

The increase of wastewater could result in the following significant impact.

Impact UTIL-2: Implementation of Strategy 2000 would result in new development that could increase the volume of wastewater sent to the City's Water Pollution Control Plant and exceed the Regional Water Quality Control Board's limit of 120 mgd effluent release into San Francisco Bay. (S)

Projected residential and commercial growth associated with implementation of *Strategy 2000* could increase the occurrence of effluent releases in excess of the 120 mgd limit. To reduce this impact to a less-than-significant level the following mitigation measure shall be implemented:

Mitigation Measure UTIL-2: Consistent with General Plan policies related to wastewater services, the City shall review individual development proposals to ensure that the projects could be adequately served by the Water Pollution Control Plant prior to the approval of any specific development projects. At the time that specific development projects are proposed, the City shall require that indoor and outdoor water conserving technologies and practices are integrated into the development. (LTS)

Table V.M-4: Wastewater Generation

Land Use	Rate* (gpd/sf)	Square Footage	Units	Generation (gpd)
Office	0.09	10,000,000	--	900,000
Retail	0.04	1,200,000	--	48,000
Residential	0.12	10,000,000	10,000	1,200,000
Hotel	0.05	2,500,000	2,500	125,000
Total	--	23,700,000	--	2,273,000

* Generation rate based upon .0040 million gallons/day (mgd)/acre for office uses, 0.0018 mgd/acre for Core Area commercial uses, 0.0050 mgd/acre for high-density residential, and 0.023 mgd/acre for hotel (commercial uses). One acre equals 43,560 square feet.

Source: City of San Jose Public Works Department, April 1991.