

4.12 UTILITIES AND SERVICE SYSTEMS

This section evaluates the effects on utilities and service systems related to implementation of the Transit Zoning Code (SD 84A and SD 84B) by identifying existing and planned utility availability and the anticipated demand. For purposes of this EIR, utilities include domestic water supply, solid waste collection and disposal, wastewater conveyance and treatment, and energy (electricity and natural gas). Storm water drainage facilities are discussed in Section 4.6 (Hydrology and Water Quality) of this document.

Data used to prepare this section was taken from various sources, including previous environmental documentation prepared for the General Plan Elements, Urban Water Management Plan, the Water Supply Assessment prepared for the proposed project, other City data sources, and contacts with utility providers. Concerns related to utilities and service systems were expressed in the comment letters during the public review of the Notice of Preparation (NOP). Full bibliographic entries for all reference materials are provided in Section 4.12.16 (References) of this section.

Water Supply

4.12.1 Environmental Setting

The domestic water services in the project area are provided by the Water Resources Division of the City of Santa Public Works Agency. The City derives water from two main sources: the groundwater extracted from the Orange County Groundwater Basin managed by the Orange County Water District (OCWD) and imported water from the Metropolitan Water District of Southern California (MWD). Total water demand for the City for fiscal year 2008 was 41,136 acre-feet per year (afy). During that period, the groundwater production accounted for 69 percent of the water supply and MWD imported water supplies provided the remaining 31 percent. The City maintains 444 miles of transmission and distribution mains, eight reservoirs with a storage capacity of 49.3 million gallons, seven pumping stations, nineteen wells, and seven import connections (Santa Ana 2005). The City also receives recycled water after advanced treatment from the OCWD facility, Green Acres Project. These recycled supplies can offset the demand for potable water supplies.

The existing water lines serving the Transit Zoning Code (SD 84A and SD 84B) area are shown in Figure 4.12-1 (Water Supply Lines in Transit Zoning Code Area). Currently the water demand for the existing project area is 994.37 afy. About 66 percent of this total water demand can be attributed to residential uses, while the remaining 29 percent is attributed to retail, commercial and industrial uses (PBS&J 2010). Table 4.12-1 (Existing Water Demand for the Project Area) shows the water demand for the existing uses within the Transit Zoning Code boundaries in gallons per day (gpd) and afy.

Table 4.12-1 Existing Water Demand for the Project Area

<i>Land Use</i>	<i>Square Footage</i>	<i>Dwelling Units</i>	<i>Acreage</i>	<i>Demand Factor</i>	<i>Total Demand (acre-ft/year)</i>
Retail	306,000	—	—	0.10 gpd/sf ^a	34.28
Commercial	1,456,926	—	—	0.09 gpd/sf ^a	146.88
Industrial	1,080,000	—	—	0.08 gpd/sf ^a	96.78
Civic	417,108	—	—	0.11 gpd/sf ^a	51.39
Green	21,780	—	0.5	4.0 acre-ft/acre ^b	2.00
<i>Subtotal Nonresidential</i>					331.33
Single Family Residential	—	1,120	—	0.55 afy/DU ^c	616.00
Multiple Family Residential	—	280	—	150 gpd/DU ^d	47.05
<i>Subtotal Residential</i>	—	1,400	—	—	663.05
<i>Existing Demand</i>					994.37 afy

SOURCE: PBS&J. Water Supply Assessment for the proposed Transit Zoning Code. January 2010

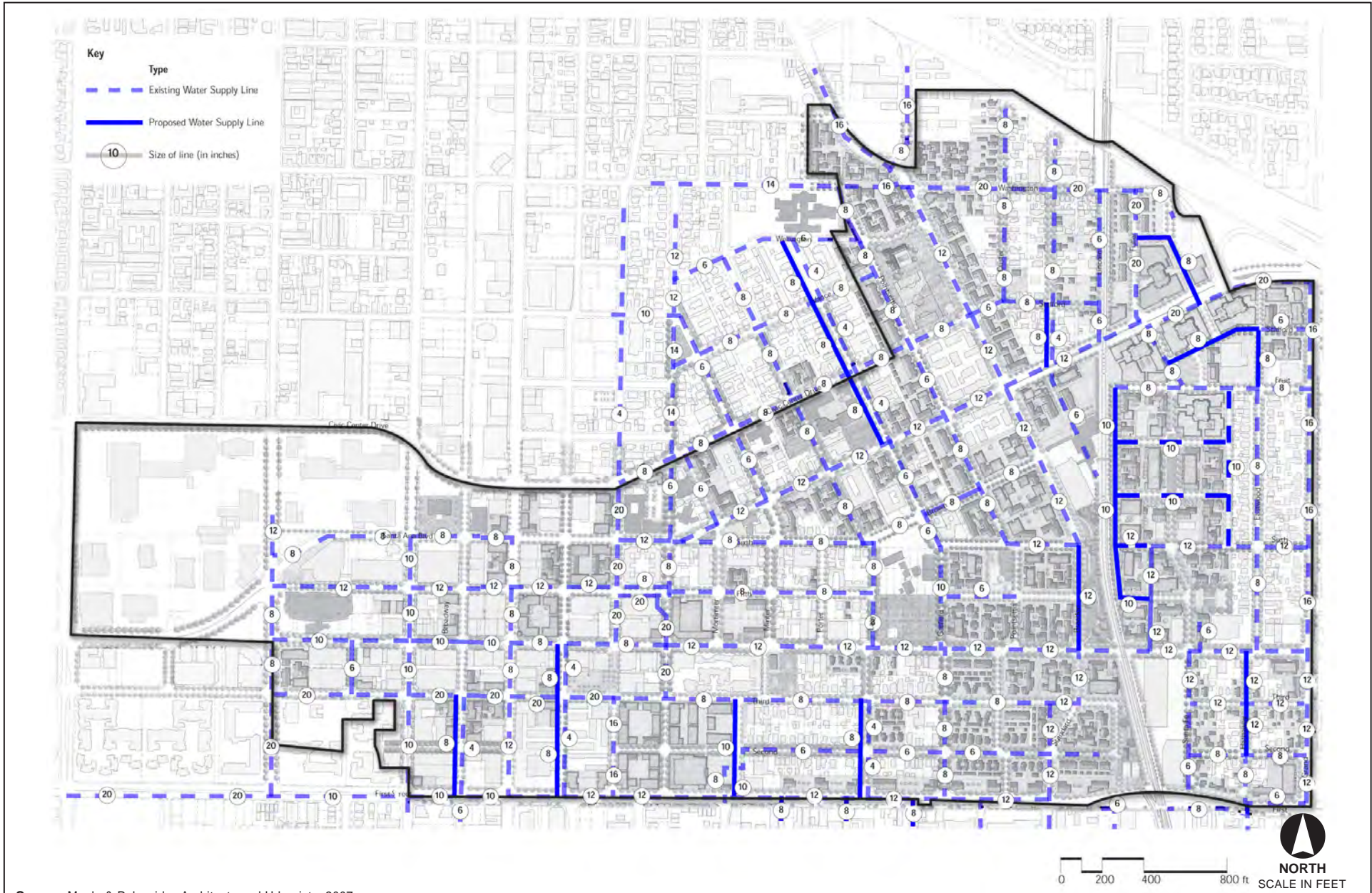
- a. Billings, Bruce R., and C. Vaughn Jones. Forecasting Urban Water Demand. 1996. American Water Works Association.
- b. Based on calculated irrigation demand, Table 4-1 (City of Santa Ana Climate Summary).
- c. City of Santa Ana Urban Water Management Plan, 2005, average residential water use per dwelling unit, 2010-2030.
- d. Utah Department of Natural Resources. Identifying Residential Water Use, 2001, national average (outside state of Utah).

■ Water Quality

OCWD manages the Orange County groundwater basin and conducts a comprehensive water quality monitoring program. The water quality data collected from these wells is used to assess ambient conditions of the basin, monitor the effects of extraction, monitor the effectiveness of the seawater intrusion barriers, evaluate impacts from historic and current land use, address poor water quality areas, and also provide early warning of emerging contaminants of concern. OCWD is compliant with groundwater drinking water regulations and operates under a California Department of Public Health (CDPH) approved monitoring program that includes monitoring all drinking water wells within the OCWD, including each of the City’s wells.

The City receives imported water from MWD. The MWD water is treated at either the Robert B. Diemer Filtration Plant located in Yorba Linda, California or the Weymouth Filtration Plant in La Verne, California before being delivered to the City. MWD tests and treats its water for microbial, organic, inorganic, and radioactive contaminants as well as pesticides and herbicides. Protection of MWD’s Water System continues to be a top priority.

Current water improvement programs include the CALFED Program, Delta Improvement Package, and Source Water Protection are being undertaken to maintain water quality. OCWD operates an extensive groundwater quality management program that allows them to effectively control water quality. Some of the programs and activities of OCWD include Source Water Protection, Surface Water Monitoring, constructed wetlands, public outreach, and regulations like Groundwater Protection Policy. The City also



Source: Moule & Polyzoides Architects and Urbanists, 2007.

FIGURE 4.12-1
Water Supply Lines in the Transit Zoning Code Area



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continues to monitor its groundwater wells for the first indication of problems as part of its water management strategy. As discussed above, MWD and OCWD are responsible for ensuring the treatment of all water supplied to the City. As required by CDPH, the agencies routinely monitor the water quality of each well and source that supplies potable water. MWD water quality staff performs tests, collects data, reviews results, prepares reports, and researches other treatment technologies to ensure water quality.

The City does not anticipate any changes in its available water supplies resulting from water quality issues in part because of the mitigation actions undertaken by MWD and OCWD as described above.

■ Existing and Projected Water Supply

Domestic water for the proposed project area is supplied by both groundwater and imported surface water sources. Currently, 69 percent of the water supplied by the City's service area was supplied by groundwater from the Orange County Groundwater Basin, and the remaining 31 percent of water supply was provided by MWD, which delivers water imported from the Colorado River and State Water Project (PBS&J 2010). As stated above, groundwater supply for the City's water system is extracted from the nineteen well sites established in Orange County Groundwater Basin.

Table 4.12-2 (Supply/Demand Comparison for the City [afy]) shows the projected water supply versus demand and the difference from 2010 to 2030. Within the City's service area, an increase in demand of 2,726 acre-feet annually is anticipated by 2030 for a projected annual year demand of 43,993 afy. In that same time period, supplies are not expected to increase, but rather hold at 46,809 afy (PBS&J 2010). A diminishing surplus in supply is expected over the 20-year planning period through 2030.

	2010	2015	2020	2025	2030
City Total Supply	46,809	46,809	46,809	46,809	46,809
City Total Demand	41,267	41,933	42,608	43,295	43,993
Difference	5,542	4,876	4,201	6,514	2,816

SOURCE: PBS&J. Water Supply Assessment for the proposed Transit Zoning Code. January 2010.

4.12.2 Regulatory Framework

■ Federal Regulations

Clean Water Act

The federal *Clean Water Act* (CWA) establishes regulatory requirements for potable water supplies including raw and treated water quality criteria. The City of Santa Ana would be required to monitor water quality and conform to the regulatory requirements of the CWA.

Safe Drinking Water Act

The federal *Safe Drinking Water Act* (SDWA) established standards for contaminants in drinking water supplies. Maximum contaminant levels or treatment techniques were established for each of the contaminants. The listed contaminants include metals, nitrates, asbestos, total dissolved solids, and microbes.

■ State Regulations

Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 et seq.)

The *Urban Water Management Planning Act* (Act) was developed due to concerns over potential water supply shortages throughout California. It requires information on water supply reliability and water use efficiency measures. Urban water suppliers are required, as part of the Act, to develop and implement UWMPs to describe their efforts to promote efficient use and management of water resources. The City prepared a UWMP, which was adopted by the City Council on December 6, 2005. Specifically, the City's 2005 UWMP described the existing and planned sources of water available to the supplier over a prescribed 5-year period and included a description of all water supply projects and programs that may be undertaken to meet total projected water use over the next 20 years.

Water Conservation Projects Act

California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (Water Code Sections 11950–11954), as reflected below:

11952 (a). It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects by establishing a state program to finance or assist in financing projects which meet state criteria and will result in additional supplies of water for use in areas of need. Water conservation and reclamation projects, including facilities for municipal and industrial advanced waste water treatment, regulatory impoundments, improvements to water supply and delivery systems, tailwater recovery systems, and sprinkler or drip irrigation systems, may result in increased quantities of usable water for beneficial purposes, but may be financially unattractive at the local level if the cost of additional fresh water is less than the cost to conserve or reclaim water.

(b) It is in the interests of both the users of water supplied by the state and the users of local water supplies to undertake water conservation and reclamation projects which supply water for purposes of the State Water Resources Development System at a cost less than the cost of new state water development facilities, and which provide benefits to local water users, including decreased salt concentrations, resulting from increased irrigation efficiency and reduced problems of pollution from waste water discharges. It is not the intent of the Legislature in enacting this chapter to affect or otherwise defer the construction of water facilities necessary to meet the requirements of the people of this state, and nothing in this chapter shall be construed to affect the authority of the department under any other provision of law.

Consistent with California Water Code Sections 11950–11954, the City has implemented various water conservation efforts (i.e., DMM 1 through DMM 16 described in the City's UWMP), as well as a Water Shortage Contingency Plan, locally known as the Emergency Water Conservation Plan (EWCP) codified

in City Ordinance No. 2073 that identifies actions that can be taken to respond to a catastrophic interruption of water supply.

Water Code §10910 et seq. (Senate Bill 610)

In 2002, the California Legislature adopted legislation concerning water supply planning efforts in California. Codified as Water Code §10910 et seq., the law coordinates local water supply and land use decisions to assist California's cities and counties with respect to adequate water supplies. Section 10910 requires cities and counties to prepare WSAs when considering approval of certain development projects in order to determine whether projected water supplies can meet the project's anticipated water demand. The projects for which WSAs must be prepared include (a) a residential development of more than 500 dwelling units; (b) a shopping center or business employing more than 1,000 people or having more than 500,000 square feet (sf) of floor space; (c) a commercial office building employing more than 1,000 people or having more than 250,000 sf; (d) a hotel or motel with more than 500 rooms; (e) an industrial or manufacturing establishment housing more than 1,000 people or having more than 650,000 sf or 40 acres; (f) a mixed-use project containing any of the foregoing; or (g) any other project that would have a water demand at least equal to a 500-dwelling-unit project. The WSA, which is also required as part of the CEQA process, includes an identification of existing water supply assessments, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. If the water demand for the proposed development has been accounted for in a recently adopted UWMP, the water supplier may incorporate information contained in that Plan to satisfy certain requirements of a WSA (California 2005).

Government Code §66473.7 (Senate Bill 221)

Other recent legislation prohibits approval of a tentative map, a parcel map for which a tentative map was not required, or a development agreement for a subdivision of property of more than 500 dwelling units, unless the applicable legislative body or the designated advisory agency provides written verification from the applicable public water system that a sufficient water supply is available or, in the alternative, a specified finding is made by the local agency that sufficient water supplies are, or will be, available prior to completion of the project. Sufficient water supply is the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand of the proposed subdivision.

■ Local Regulations

Integrated Resources Plan

The Integrated Resources Plan (IRP), approved by MWD in May 2004, establishes regional targets for developing water supply. Portions of the IRP address conservation, local supplies, State Water Project supplies, Colorado River Aqueduct supplies, water drawn from regional storage, and Central Valley water transfers. The 2003 Update of the IRP ensures that MWD will have a reliable supply of water through 2025.

City of Santa Ana General Plan—Conservation Element

The Conservation Element of the General Plan is designed to preserve, maintain, and properly use natural resources to enhance the environmental quality and to protect the public health, safety, and welfare of the community through effective management. The following policies are related to water supply services for the Transit Zoning Code (SD 84A and SD 84B) area.

Objective 1.2 Provide sufficient water of adequate quality for all users

Objective 2.1 Conserve water resources in commercial, industrial, residential, and recreational uses.

Consistency Analysis

As part of the analysis for this EIR, the City has evaluated the availability of sufficient water supplies for City residents. Within the context of the City of Santa Ana's projected demands through 2030, the Transit Zoning Code (SD 84A and SD 84B) represents just one percent of anticipated demands in the City. The water demand associated with the Transit Zoning Code (SD 84A and SD 84B) does not exceed the supply of groundwater available from the Orange County groundwater basin and imported water available from MWD. Water conservation practices within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) would be in the same manner as the remainder of the City and in accordance with current City regulations and practices. As such, the Transit Zoning Code (SD 84A and SD 84B) would be considered consistent with the goals and policies of the City's Conservation Element.

4.12.3 Project Impacts and Mitigation

■ Analytic Method

In preparing this EIR, projected water use was calculated using the generation factors based on the assumption of the unit water demand by area. According to the Water Supply Assessment prepared for the proposed project (PBS&J 2010), to determine the water demand of the various land uses proposed, water use demand factors were formulated based on data from the City's UWMP and an American Water Works Association publication *Forecasting Urban Water Demand*. Unit demand factors were calculated for all land use categories (within the Transit Zoning Code (SD 84A and SD 84B) area). The majority of residential land uses projected in the study area consists of very high density, multi-family residential. The Unit Demand Factors used are given in Table 4.12-3 (United Water Demand Factors):

The demand generated by the proposed project would be compared to City supplies to assess the impact of the proposed project on the water supply.

<i>Land Use Category</i>	<i>Unit Water Demand Factor</i>
Retail	0.10 gpd/sf
Commercial	0.09 gpd/sf
Industrial	0.08 gpd/sf
Civic	0.11 gpd/sf
Green	4.00 ft
Single Family Residential	0.55 afy/units
Multiple Family Residential	150 gpd/units

SOURCE: PBS&J. Water Supply Assessment for the proposed Transit Zoning Code. January 2010.

■ Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines, except where noted. For purposes of this EIR, implementation of the Transit Zoning Code (SD 84A and SD 84B) may have a significant adverse impact on water if it would do any of the following:

- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Require new or expanded water entitlements and resources if there are not sufficient water supplies available to serve the project from existing entitlements and resources

■ Effects Found to Have No Impact

There are no Effects Found to Have No Impact with respect to water supply.

■ Effects Found to Be Less Than Significant

Threshold	Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
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Impact 4.12-1 **Long-term cumulative development pursuant to the Transit Zoning Code (SD 84A and SD 84B) would generate an additional demand for water, but would not require water supplies in excess of existing entitlements and resources or result in the need for new or expanded entitlements. This is considered a *less-than-significant* impact.**

Domestic water for the Transit Zoning Code (SD 84A and SD 84B) area is supplied by both groundwater and imported surface water sources, as discussed above. In 2009, a majority of water supplied to the Transit Zoning Code (SD 84A and SD 84B) area was supplied by groundwater from the Orange County Groundwater Basin. Specifically, approximately 69 percent of the water supplied by the

City’s service area was supplied by groundwater from the Orange County Groundwater Basin, and the remaining 31 percent of water supply was provided by MWD. As it currently exists, the total existing water demand for the proposed project site is approximately 994.37 acre-feet annually as shown in Table 4.12-4 (Existing Water Demand in the Area).

<i>Land Use</i>	<i>Square Footage</i>	<i>Dwelling Units</i>	<i>Acreage</i>	<i>Demand Factor</i>	<i>Total Demand (acre-ft/year)</i>
Retail	306,000	—	—	0.10 gpd/sf ^a	34.28
Commercial	1,456,926	—	—	0.09 gpd/sf ^a	146.88
Industrial	1,080,000	—	—	0.08 gpd/sf ^a	96.78
Civic	417,108	—	—	0.11 gpd/sf ^a	51.39
Green	21,780	—	0.5	4.0 acre-ft/acre ^b	2.00
<i>Subtotal Nonresidential</i>					331.33
Single Family Residential	—	1,120	—	0.55 afy/DU ^c	616.00
Multiple Family Residential	—	280	—	150 gpd/DU ^d	47.05
<i>Subtotal Residential</i>	—	1,400	—	—	663.05
<i>Existing Demand</i>					994.37

- a. Billings, Bruce R., and C. Vaughn Jones. Forecasting Urban Water Demand. 1996. American Water Works Association.
- b. Based on calculated irrigation demand, Table 4 1 (City of Santa Ana Climate Summary).
- c. City of Santa Ana Urban Water Management Plan, 2005, average residential water use per dwelling unit, 2010-2030.
- d. Utah Department of Natural Resources. Identifying Residential Water Use, 2001, national average (outside state of Utah).

Buildout of the Transit Zoning Code (SD 84A and SD 84B) would allow a maximum net of 387,000 sf of retail, 124,000 fewer sf of commercial, 990,000 fewer sf of industrial, 21,000 fewer sf of civic, 15.5 acres of open/green space and 4,075 residential units at completion, including existing uses that would remain.

As stated previously, a WSA was prepared to assess the water demand and supply conditions for the project area and assess the availability of water in the future. As shown in Table 4.12-5 (Projected Transit Zoning Code Buildout Demand), the water demand for the overall buildout of the proposed project is 1,125.37 afy. Nearly all (75 percent) of the total water demand can be attributed to residential uses. As shown in Table 4.12-6 (Net Change in Water Demand Plan Area), the proposed uses allowed under the Transit Zoning Code (SD 84A and SD 84B) would result in a net increase of 131 afy. This was calculated using the net new development which considered the units to be demolished, the total new development, as well as uses that would not be developed and remain.

<i>Land Use</i>	<i>Square Footage</i>	<i>Dwelling Units</i>	<i>Acreage</i>	<i>Demand Factor</i>	<i>Total Demand (acre-ft/year)</i>
Retail	693,000	—	—	0.10 gpd/sf ^a	77.63
Commercial	1,332,926	—	—	0.09 gpd/sf ^a	134.38
Industrial	90,000	—	—	0.08 gpd/sf ^a	8.07
Civic	8,000	—	—	0.11 gpd/sf ^a	0.99
Green	680,000	—	15.5	4.0 ft/acre/year ^b	62.00
<i>Subtotal Nonresidential</i>	<i>2,803,926</i>				<i>283.05</i>
Single Family Residential	—	326	—	0.55 afy/DU ^c	179.30
Multiple Family Residential	—	3,946	—	150 gpd/DU ^d	663.01
<i>Subtotal Residential</i>		<i>4,272</i>			<i>842.31</i>
<i>Total Demand</i>					<i>1,125.37 afy</i>

a. Billings, Bruce R., and C. Vaughn Jones. Forecasting Urban Water Demand. 1996. American Water Works Association.

b. Based on calculated irrigation demand, Table 4-1 (City of Santa Ana Climate Summary).

c. City of Santa Ana Urban Water Management Plan, 2005, average residential water use per dwelling unit, 2010-2030.

d. Utah Department of Natural Resources. Identifying Residential Water Use, 2001, national average (outside state of Utah).

	<i>Million Gallons/Day</i>	<i>Total Demand (acre-ft/year)</i>
Total Transit Code Zoning Demand ^a	346.5	1,125.4
Total Existing Area Demand ^b	324.0	994.4
<i>Net Change in Demand</i>	<i>22.5</i>	<i>131</i>

a. Table 4.12-4 (Projected Transit Zoning Code Buildout Demand)

b. Table 4.12-3 (Existing Water Demand in the Area)

Within the context of the City of Santa Ana's projected demands through 2030, the overall project demand represents just two and a half percent of anticipated demands in the City. Furthermore, the net increase of demand accounts for less than 7 percent of anticipated growth in water demand between 2010 and 2030 (PBS&J 2010). According to the WSA prepared for the project, in years of normal and above-normal precipitation, the City has adequate supplies to serve 100 percent of its normal-, single-dry-, and multiple-dry-year demand up to 2030. If MWD were to impose Stage 3 reductions, commencing in 2030 the City could anticipate a potential supply shortfall and would implement subsequent phases of its current EWCP.

Thus, water supply with adequate volumes, pressure and quality is expected to be available at all times to the Transit Zoning Code (SD 84A and SD 84B) area. Thus, the impact of the proposed project on water services would be *less than significant*. However, should infrastructure improvements to the existing water system be required or additional facilities be deemed necessary, individual property developers would be required to pay their fair share of the cost of all or portions of the needed improvements.

Threshold	Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
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Impact 4.12-2 **Long-term cumulative development pursuant to the Transit Zoning Code (SD 84A and SD 84B) would not require or result in the construction of new or expanded water treatment facilities, the construction of which could cause significant environmental effects. This is considered a *less-than-significant* impact.**

As discussed above, the City’s imported surface water supply is primarily treated at the MWD Diemer Filtration Plant, located in Yorba Linda, with a treatment capacity of approximately 520 MGD, flowing at an average of 140 MGD in the winter (27 percent capacity) and 375 MGD in the summer (72 percent capacity). In addition to Diemer-treated imported water, the City also receives potable water from MWD’s Weymouth Filtration Plant, located in La Verne, which operates at approximately 42 percent capacity during the winter and 65 percent capacity during the summer.

Additional development accommodated under the proposed project would increase water use within the City, thus potentially increasing the need for water treatment services. As discussed above, within the context of the City of Santa Ana’s projected demands through 2030, this represents just two and a half percent of anticipated demands in the City. Further, the project’s expected demand at buildout of 1,125.37 afy accounts for less than 7 percent of anticipated growth in water demand between 2010 and 2030. The proposed project’s demands would not therefore, be expected to exceed the capacity of the groundwater wells from the Orange County Groundwater Basin and treated water available from MWD; therefore, the existing capacities of the wells and MWD’s water treatment plant would be sufficient through 2030.

Implementation of the Transit Zoning Code (SD 84A and SD 84B) would not require or result in the construction of new water treatment facilities or the expansion of existing facilities, and impacts would be *less than significant*. No mitigation would be required.

4.12.4 Cumulative Impacts

The geographic context for the analysis of cumulative impacts associated with water systems would be the service area of the City’s water provider, MWD. The cumulative analysis was completed using water provider projections for the Transit Zoning Code (SD 84A and SD 84B) area.

Currently, the City and MWD provide water service to the Transit Zoning Code (SD 84A and SD 84B) area. Although all water providers are required to prepare plans to ensure that adequate water supplies exist for future growth, there is ongoing controversy surrounding the state’s water supply and distribution efforts. According to the WSA prepared for the project, MWD, the City’s provider of imported water, and OCWD will have adequate supplies to supply the project. In addition, the implementation of conservation measures would be required on a project-specific basis and water shortage contingency plans would further reduce additional water demand. Finally, future development is

required to adhere to Section 10910 of the California Water Code. Therefore, the cumulative impact to water supply would be *less than significant*.

Sewer Services

4.12.5 Environmental Setting

The Water Resources Division of the Public Works Department handles wastewater collection within the City by maintaining 390 miles of local sewer lines, 7,630 manholes, and two lift stations. Waste from the City's wastewater collection system is treated by the Orange County Sanitation District (OCSD), which operates the third largest wastewater treatment system on the west coast, consisting of nearly 600 miles of trunk sewers and 200 miles of subtrunk sewers, two regional treatment plants, and an ocean disposal system (Santa Ana 2005). The OCSD service area includes 471 square miles of central and northwest Orange County including the City of Santa Ana (OCSD n.d.a).

The plant provides advanced primary and secondary treatment through an activated sludge system. The secondary effluent is either blended with the advanced primary effluent and routed to the ocean disposal system, or is sent to the Orange County Water District facilities for advanced treatment and recycling. Current primary treatment capacity for Reclamation Plant No. 1 is 218 mgd of wastewater, with an average daily flow of 120 mgd. Remaining capacity at this plant is 98 mgd. The plant is designed to provide primary treatment to 108 mgd and secondary treatment to 110 mgd (Huntington Beach 2009).

Currently, the sewage from the City is diverted to Reclamation Plant No. 1 in the City of Fountain Valley. The OCSD Reclamation Plant No. 1 currently maintains a design capacity of 218 million gallons per day (mgd) and treats an average of 120 mgd. Remaining capacity at this plant is 98 mgd. The plant is designed to provide primary treatment to 108 mgd and secondary treatment to 110 mgd. The primary treatment system will be increased to a design capacity of 198 mgd during the current discharge permit term (CRWQCB n.d.). However, Reclamation Plant No. 1 is currently unable to treat all average daily flows to secondary treatment levels. This plant is currently being upgraded to add an additional 60 mgd of secondary treatment capacity (Huntington Beach 2009.) The major processes are preliminary treatment, primary treatment, anaerobic digestion, secondary treatment, and solids handling (OCSD n.d.b). Reclamation Plant No. 2 is located in the City of Huntington Beach adjacent to the Santa Ana River and about 1,500 feet from the ocean. This plant provides a mix of advanced primary and secondary treatment. The plant receives raw wastewater through five major sewers. Approximately 33 percent of the influent receives secondary treatment through an activated sludge system, and all of the effluent is discharged into the ocean disposal system. OCSD's treated wastewater is discharged through a 120-inch outfall at a depth of about 200 feet below sea level and nearly 5 miles offshore from the mouth of the Santa Ana River. Current capacity for Reclamation Plant No. 2 is 168 mgd of primary treated wastewater and 90 mgd of secondary treated wastewater. The current average flow is 151 mgd; thus, remaining capacity at this plant is approximately 24 mgd. This plant is currently being upgraded to add 60 mgd of secondary treatment capacity (OCSD n.d.).

OCSD also reclaims up to 10 million gallons of treated wastewater every day, which is sent for further processing and then used for landscape irrigation and for injection into the groundwater seawater

intrusion barrier (OCSD n.d.a). The existing sewer lines are identified in Figure 4.12-2 (Sewer Lines in Transit Zoning Code Area). In addition, the existing storm water drains within the Transit Zoning Code (SD 84A and SD 84B) area are shown in Figure 4.12-3 (Storm Drains in Transit Zoning Code Area).

Expansion plans by OCSD are ongoing and designed to address the incremental increase in sewage generation as a result of a new development. The City of Santa Ana also continues to maintain local sewer lines and upgrades being made as part of individual projects.

4.12.6 Regulatory Framework

■ Federal Regulations

National Pollution Discharge Elimination System (NPDES) Permits

The NPDES permit system was established in the Clean Water Act (CWA) to regulate both point source discharges (a municipal or industrial discharge at a specific location or pipe) and nonpoint source discharges (diffuse runoff of water from adjacent land uses) to surface waters of the United States. For point source discharges, such as sewer outfalls, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge.

■ State

Disposal of Biosolids

Title 40 of the Code of Federal Regulations (CFR) Part 503, Title 23 California Code of Regulations, and standards established by the RWQCB regulate the disposal of biosolids.

Water Conservation Projects Act

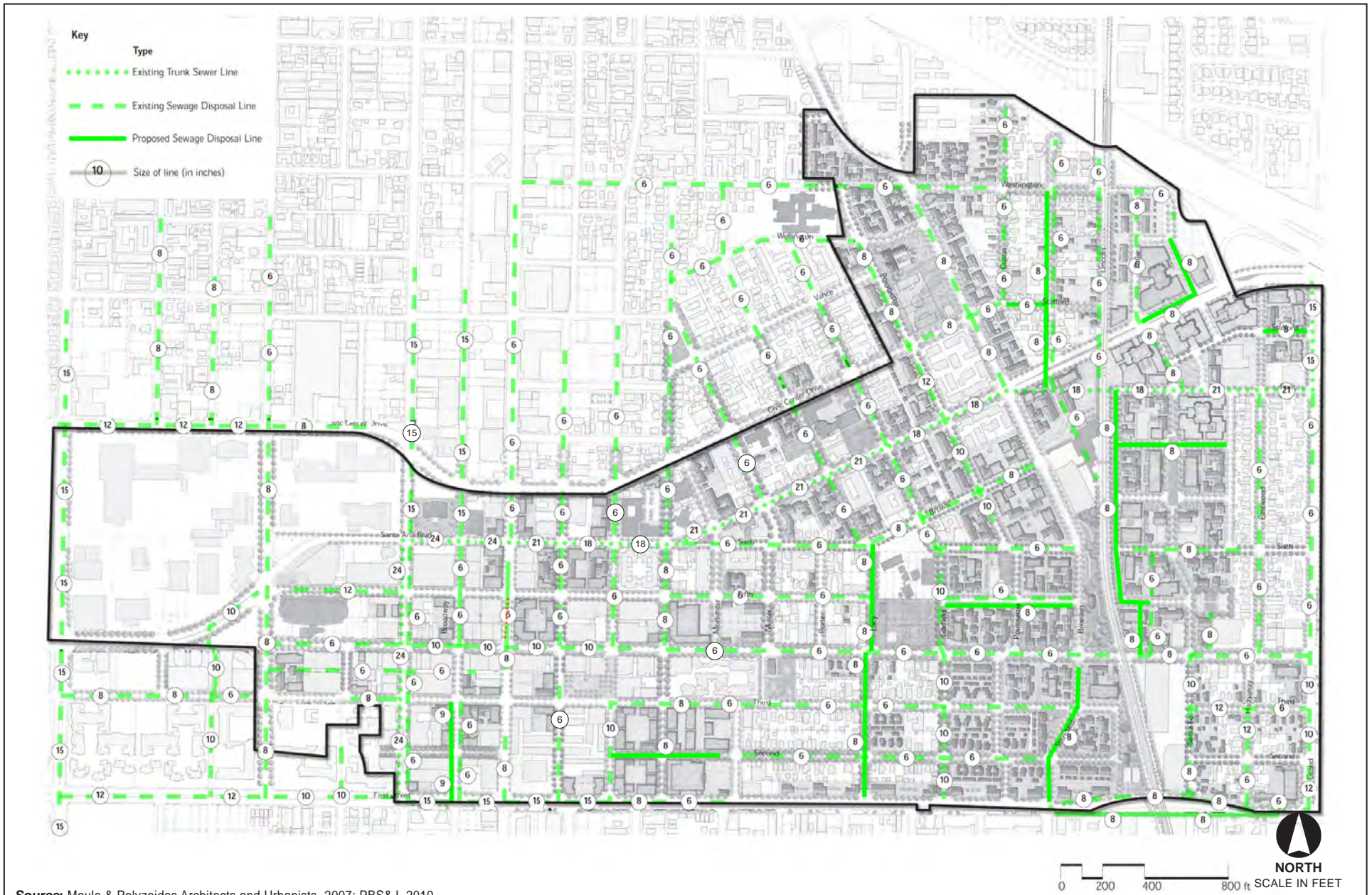
California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (Water Code Sections 11950–11954), as reflected below:

11952(a). It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects.

■ Local

City of Santa Ana General Plan- Conservation Element

The Conservation Element of the General Plan is designed to preserve, maintain, and properly use natural resources to enhance the environmental quality and to protect the public health, safety, and welfare of the community through effective management. The following policies are related to sewer services for the Transit Zoning Code (SD 84A and SD 84B) area.



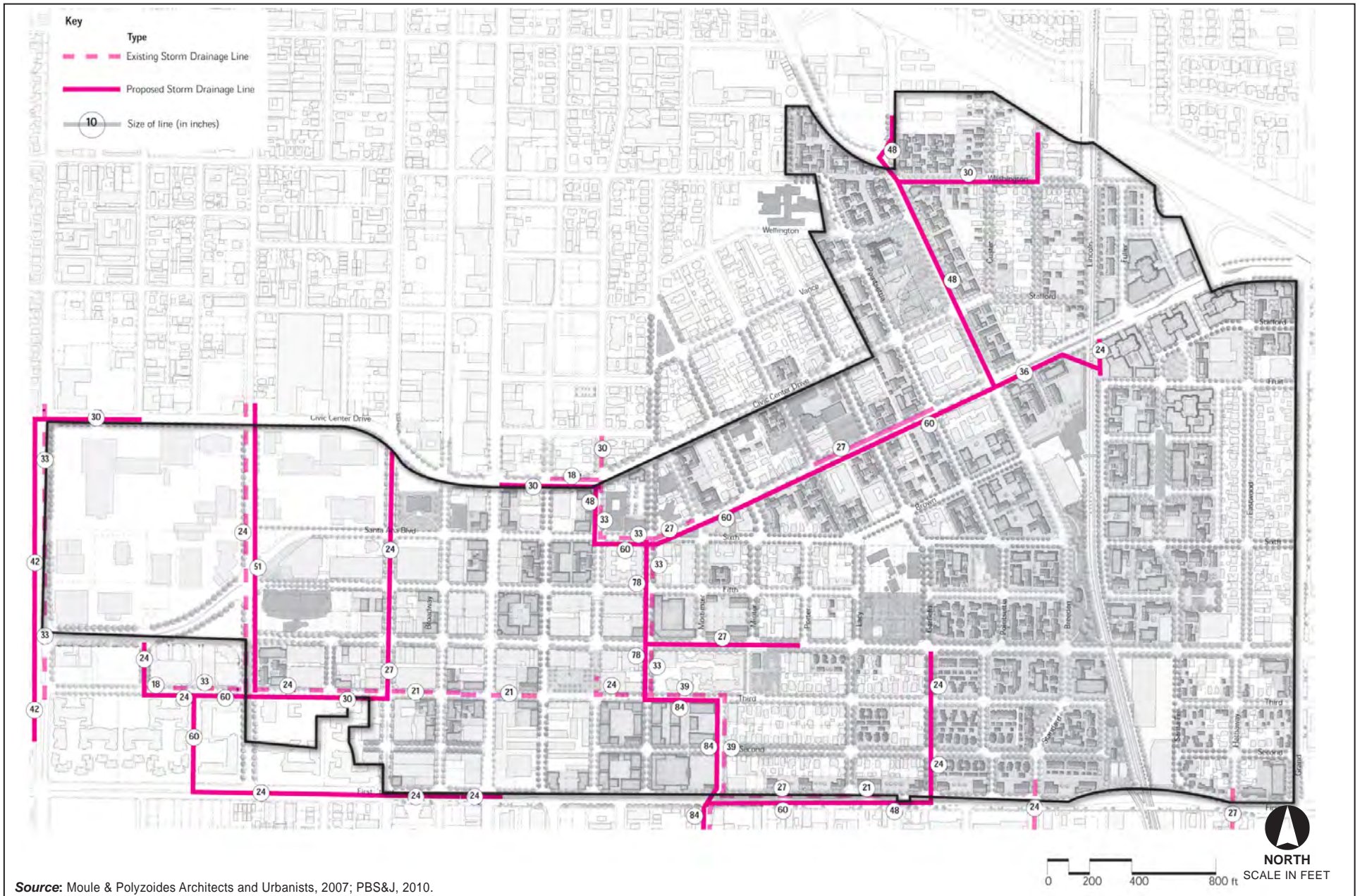
Source: Moule & Polyzoides Architects and Urbanists, 2007; PBS&J, 2010.

FIGURE 4.12-2
Sewer Lines in the Transit Zoning Code Area



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City of Santa Ana Transit Zoning Code (SD 84A and SD 84B) EIR



Source: Moule & Polyzoides Architects and Urbanists, 2007; PBS&J, 2010.

FIGURE 4.12-3
Storm Drains in the Transit Zoning Code Area



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City of Santa Ana Transit Zoning Code (SD 84A and SD 84B) EIR

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Objective 1.4 Assure adequate sewer treatment facilities to meet population and economic growth requirements.

Consistency Analysis

Wastewater generation is correlated with water usage and continued water conservation practices would reduce the volume of wastewater generated. New developments under implementation of the proposed Transit Zoning Code (SD 84A and SD 84B) area would continue to comply with all provisions of the NPDES program and would be required to comply with all applicable wastewater discharge requirements issued by the State Water Resources Control Board (SWRCB) and RWQCB. OCSD and the City would maintain local sewer lines and perform upgrades on an as-needed basis. Sewer treatment practices within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) would be in the same manner as the remainder of the City and in accordance with current City regulations and practices. As such, the Transit Zoning Code (SD 84A and SD 84B) would be considered consistent with the goals and policies of the City's Conservation Element.

4.12.7 Project Impacts and Mitigation

■ Analytic Method

To determine wastewater and sewage impacts associated with implementation of the Transit Zoning Code (SD 84A and SD 84B), estimated future wastewater flows shown in Table 4.12-7 (Existing Wastewater Demand for the Proposed Transit Zoning Code Project Area) shows the current demand. Table 4.12-8 (Overall Wastewater Demand for the Proposed Transit Zoning Code Project Area) shows the net difference in wastewater demand as a result of buildout of the project. For the purposes of this analysis, it was assumed that wastewater generation is equivalent to 85 percent of water demand.

Land Use	Unit Water Demand Factor	Existing Development	
			Wastewater Generated (gpd)
Retail	0.085	306,000 sf	26,010
Commercial	0.0765	1,456,926 sf	111,454
Industrial	0.068	1,080,000 sf	73,440
Civic	0.0935	417,108 sf	39,000
Residential	127.5 gpd/unit	1,400 units	178,500
Total	—	—	428,404

Table 4.12-8 Overall Wastewater Demand for the Proposed Transit Zoning Code Project Area			
Land Use	Unit Water Demand Factor	Existing Development	
			Wastewater Generated (gpd)
Retail	0.085	693,000 sf	58,905
Commercial	0.0765	1,332,926 sf	101,969
Industrial	0.068	90,000 sf	6,120
Civic	0.0935	8,000 sf	748
Residential	127.5 gpd/unit	4,272 units	544,680
Total	—	—	712,422

■ Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, implementation of the Transit Zoning Code (SD 84A and SD 84B) may have a significant adverse impact on wastewater conveyance systems or treatment facilities if it would do any of the following:

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

■ Effects Found to Have No Impact

There are no Effects Found to Have No Impact with respect to wastewater.

■ Effects Found to Be Less Than Significant

Threshold	Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
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Impact 4.12-3 Long-term cumulative development pursuant to the Transit Zoning Code (SD 84A and SD 84B) would not exceed wastewater treatment requirements of the Orange County Sanitation District. This is considered a *less-than-significant* impact.

The City of Santa Ana requires NPDES permits, as administered by the RWQCB, according to federal regulations for both point source discharges (a municipal or industrial discharge at a specific location or

pipe) and nonpoint source discharges (diffuse runoff of water from adjacent land uses) to surface waters of the United States. For point source discharges, such as sewer outfalls, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge.

New development under implementation of the proposed Transit Zoning Code (SD 84A and SD 84B) area would continue to comply with all provisions of the NPDES program, as enforced by the RWQCB. Therefore, the proposed Transit Zoning Code (SD 84A and SD 84B) would not result in an exceeding of wastewater treatment requirements. Additionally, the NPDES Phase I and Phase II requirements would regulate discharge from construction sites. All future projects under the proposed Transit Zoning Code (SD 84A and SD 84B) area would be required to comply with all applicable wastewater discharge requirements issued by the State Water Resources Control Board (SWRCB) and RWQCB. Therefore, implementation of the proposed project would not exceed applicable wastewater treatment requirements of the RWQCB with respect to discharges to the sewer system or stormwater system within the City. A *less-than-significant* impact would occur, and no mitigation is required.

Threshold	Would the project require or result in the construction of new or expanded wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
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Impact 4.12-4 Long-term cumulative pursuant to the Transit Zoning Code (SD 84A and SD 84B) could require the construction of new or expanded wastewater conveyance systems, the construction of which would not cause significant environmental effects. This is considered a *less-than-significant* impact.

As shown in Table 4.12-8, the project would result in a total demand of 712,422 gpd. However, as shown in Table 4.12-7, existing demand for wastewater conveyance and disposal is 428,404 gpd. Therefore, net increase in demand for wastewater conveyance and disposal is 284,018 gpd. As stated previously, OCSD maintains certain trunk sewer lines that may require expansion on an as-needed basis due to incremental increases in sewage generation as a result of a new development. The City would also maintain local sewer lines and upgrades as part of individual projects. Implementation of the following mitigation measure would ensure that any new development within the Transit Zoning Code (SD 84A and SD 84B) area does not result in an exceedance of an existing sewer conveyance capacity for City and OCSD facilities.

MM4.12-2 Individual project applicants shall prepare site-specific sewer evaluations, including flow monitoring and modeling, during the project design to determine the adequacy of the existing sewer pipe capacity in the affected project area lines. The evaluation shall be submitted to the City of Santa Ana or OCSD, as appropriate, for review and approval prior to issuance of building permits. Any recommendations made in the site-specific sewer evaluations shall be incorporated into the design of each individual project.

Also, In addition, because wastewater generation is correlated with water usage, continued water conservation practices would reduce the volume of wastewater generated. As a result of the mitigation measure and conservation practices, the impact of development under the Transit Zoning Code (SD 84A

and SD 84B) to the wastewater conveyance system would be *less than significant*, and no further mitigation is required.

Threshold	Would the project result in a determination by the wastewater treatment provider that 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?
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Impact 4.12-5 **Long-term cumulative development pursuant to the Transit Zoning Code (SD 84A and SD 84B) would not increase wastewater generation such that treatment facilities would be inadequate to serve the project's projected demand in addition to the provider's existing commitments. This is considered a *less-than-significant* impact.**

New development under implementation of the proposed Transit Zoning Code (SD 84A and SD 84B) would generate additional demand on the existing sewer system from increased sewage flows. New residential, commercial, and office growth would generate wastewater that would require treatment. As described in the Existing Conditions section, wastewater service within the project area is provided by the City and OCSD. Wastewater from the City's system and OCSD is treated by the OCSD at Reclamation Plant No. 1 in the City of Fountain Valley. The OCSD Treatment Plant No. 1 currently maintains a design capacity of 218 MGD and treats on average a flow of 120 MGD. The treatment plant serving the City is operating below their design capacity.

The additional 284,018 gpd of wastewater, as stated above under Impact 4.12-4, would be distributed to Treatment Plant No. 1, which has the capacity to treat the full increase in sewage from development in the proposed Transit Zoning Code area. Increased wastewater due to new development under implementation of the proposed Transit Zoning Code could be accommodated within the existing treatment infrastructure, expansion would not be required. Therefore, impacts to the wastewater treatment facilities associated with increased growth in the City would be *less than significant* and no mitigation is required.

4.12.8 Cumulative Impacts

The geographic context for the analysis of cumulative impacts associated with sewage treatment systems and recycled water conveyance systems would be the wastewater service providers' areas for the project area.

Currently, the City of Santa Ana and OCSD provide wastewater infrastructure to the project area. OCSD provides regional wastewater treatment service. Development of cumulative projects within the wastewater service providers' areas, including the proposed project, would generate additional quantities of wastewater, depending on net increases in population, square footage, and intensification of uses. Cumulative projects would contribute to the overall regional demand for wastewater treatment service.

The design capacities of the wastewater treatment facilities are based on the regional growth forecast adopted by SCAG, which in turn is based on cities' general plans and other forecasts of SCAG's member cities. As analyzed in Section 4.09 of this EIR, full buildout of the proposed project will not exceed the

SCAG's growth projections for the City. Additionally, the existing treatment plants operate well below their design capacity. Thus, it is anticipated that cumulative development would not exceed the capacity of the wastewater treatment system. This cumulative impact is considered *less than significant*. The City would continue to implement water conservation measures that would result in a decrease in wastewater generation, and each of the wastewater treatment plants would still have excess capacity. Consequently, the proposed Transit Zoning Code (SD 84A and SD 84B) would not result in a cumulatively considerable contribution to an impact on wastewater treatment. The cumulative impact of the project would be *less than significant*.

Cumulative growth in the wastewater service providers' areas could result in the need for additional wastewater conveyance infrastructure, which could result in significant cumulative impacts depending upon the nature and extent of the proposed improvements. However, any project connecting to the sewer system is required to pay connection fees in accordance with existing regulations. Existing regulations ensure that all users pay their fair share for any necessary expansion of the system, including expansion to wastewater treatment facilities and would ensure that the cumulative impact is less than significant. Therefore, the project's cumulative impact would be *less than significant*.

Solid Waste

4.12.9 Environmental Setting

The Orange County Integrated Waste Management Department (OCIWMD) operates the landfills in Orange County. The City contracts with the Waste Management of Orange County in Santa Ana to collect and dispose of the City's solid waste. The solid waste is disposed of at the Frank R. Bowerman Landfill located in Irvine and Olinda Alpha Landfill located in Brea. The Frank R. Bowerman Landfill is a 725-acre landfill that opened in 1990 and is operating with a maximum daily permitting capacity of 8,500 tons per day and is expected to remain open until 2053 (OCIWMD n.d.a).²⁰ The Olinda Alpha Landfill is situated on 565 acres, of which 420 acres are permitted for refuse disposal, with daily maximum permitted disposal capacity of 8,000 tons (OCIWMD n.d.b). The facility receives approximately 6,300 tons per day of waste, and the ultimate site capacity is 123.1 million yd. The facility has an expected closure date of December 2021 (OCIWMD n.d.b).

The City of Santa Ana has a Source Reduction and Recycling Element (SRRE) started in 1992 that aims at recycling, composting, special waste disposal, and education and public information programs. This program aimed at diverting 50 percent of the solid waste generated by the City by 2000, in compliance with AB939, is discussed below. The City presently diverts approximately 60 percent of the solid waste generated.

²⁰ Orange County Waste and Recycling Website. <http://egov.ocgov.com/ocgov/Info%20OC/Departments%20&%20Agencies/OC%20Waste%20&%20Recycling/Landfill%20Information>. Accessed January 7, 2010.

■ Federal

With the exception of determining where disposal sites are located and operational standards, there are no applicable federal laws, regulations, or policies that pertain to solid waste.

■ State

At the state level, the management of solid waste is governed by regulations established by the California Integrated Waste Management Board (CIWMB), which delegates local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies. In 1997, some of the regulations adopted by the State Water Quality Control Board pertaining to landfills (Title 23, Chapter 15) were incorporated with CIWMB regulations (Title 14) to form Title 27 of the California Code of Regulations.

California Solid Waste Reuse and Recycling Access Act of 1991

The *California Solid Waste Reuse and Recycling Access Act of 1991* requires each jurisdiction to adopt an ordinance by September 1, 1994 requiring each “Development Project” to provide an adequate storage area for collection and removal of recyclable materials.

California Integrated Waste Management Board

At the state level, the management of solid waste is governed by regulations established by the CIWMB, which delegates local permitting, enforcement, and inspection responsibilities to local enforcement agencies. In 1997, some of the regulations adopted by the State Regional Water Quality Control Board pertaining to landfills (Title 23, Chapter 15) were incorporated with CIWMB regulations (Title 14) to form Title 27 of the *California Code of Regulations*.

AB 939—California Integrated Waste Management Act

In 1989, the Legislature adopted the California Integrated Waste Management Act of 1989 (AB 939), which established an integrated waste management hierarchy that consists of the following in order of importance: source reduction, recycling, composting, and land disposal of solid waste. The law also required that each county prepare a new Integrated Waste Management Plan. The Act further required each city to prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. Each source reduction element includes a plan for achieving a solid waste goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. Senate Bill (SB) 2202 made a number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act. These changes included a revision to the statutory requirement for 50 percent diversion of solid waste to clarify that local government shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

■ Local

City of Santa Ana General Plan- Conservation Element

The Conservation Element of the General Plan is designed to preserve, maintain, and properly use natural resources to enhance the environmental quality and to protect the public health, safety, and welfare of the community through effective management. The following policies are related to solid waste services for the Transit Zoning Code (SD 84A and SD 84B) area:

Objective 1.3 Provide safe, land-conserving disposal of solid waste.

Consistency Analysis

The percentage of waste produced within the proposed plan area represents a small percentage of the overall solid waste that is accumulated throughout the City. The waste generated by the development under implementation of the Transit Zoning Code (SD 84A and SD 84B) includes less than 0.1 percent of the existing maximum permitted capacity of 8,500 tons per day of the Frank R. Bowerman landfill. In addition, development with the Transit Zoning Code area would participate in the City's recycling program to reduce long-term solid waste disposal service impacts. Waste generated within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) would be disposed of in the same manner as the remainder of the City and in accordance with current City regulations and practices. As such, the proposed project would be considered consistent with the goals and policies of the City's Conservation Element.

4.12.10 Project Impacts and Mitigation

■ Analytic Method

Solid waste generation under the proposed development was calculated using generation rates based on the land uses given by the California Integrated Waste Management Board. To determine the impacts on solid waste disposal resulting from development under implementation of the proposed project, solid waste generation was compared to the total anticipated capacity at landfills that serve the area.

■ Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, long-term cumulative development pursuant to the Transit Zoning Code may have a significant adverse impact on solid waste if it would do any of the following:

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs²¹

²¹ This standard has been re-written from a positive sense ("sufficient") to a negative sense ("insufficient") for ease of comprehension.

- Fail to comply with applicable federal, State, and local statutes and regulations related to solid waste²²

Effects Found to Have No Impact

There are no Effects Found to Have No Impact with respect to solid waste.

Effects Found to Be Less Than Significant

Threshold	Would the project be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs?
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Impact 4.12-6 Long-term cumulative development pursuant to the Transit Zoning Code would not generate solid waste that exceeds the permitted capacity of landfills serving the area. This is considered a *less-than-significant* impact.

As discussed previously, the majority of solid waste generated within the Transit Zoning Code (SD 84A and SD 84B) area is hauled to the Frank R. Bowerman Landfill located in Irvine and the Olinda Alpha Landfill located in Brea. The increase in solid waste generation anticipated from buildout of the Transit Zoning Code (SD 84A and SD 84B) will be 1,790 pounds/day (0.895 tons/day), as shown in Table 4.12-9 (Net Increase in Solid Waste Generation). This is an increase of approximately 6.5 percent over existing conditions.

Table 4.12-9 Net Increase in Solid Waste Generation

Land Use	Solid Waste Generation Rates (lbs/unit/day)	Existing Uses to be Converted		Transit Zoning Code Buildout		Net Difference	
			Waste Generated (lbs/day)		Waste Generated (lbs/day)		Waste Generated (lbs/day)
Retail	0.006 lbs/sf/day	306,000	1,836	693,000	4,158	387,000	2,322
Commercial	0.006 lbs/sf/day	124,000	744	0	0	-124,000 sf	-744
Industrial	0.006 lbs/sf/day	1,080,000	6,480	90,000	540	-990,000 sf	-5,940
Civic	0.006 lbs/sf/day	29,000	174	8,000	48	-21,000 sf	-126
Residential	4 lbs/dwelling unit/day	197	788	4,272	17,088	4,075	16,300
Total			10,022 lbs/day (5.011 tons/day)		21,834 lbs/day (10.917 tons/day)		11,812 lbs/day (5.906 tons/day)

SOURCE: Estimated Solid Waste Generation Rates by California Integrated Waste Management Board <http://www.ciwmb.ca.gov/wastechar/wastegenrates/>

²² This standard has been re-written from a positive sense (“Comply”) to a negative sense (“Fail to comply”) for ease of comprehension.

The net increase of approximately 11,812 lbs per day of solid waste, which will result in the generation of 5.906 tons per day, is equivalent to less than 0.1 percent of the existing maximum permitted capacity of 8,500 tons per day for the Frank R. Bowerman Landfill and 8,000 tons per day for the Olinda Alpha Landfill. Compliance with the City’s recycling program would further reduce long-term solid waste disposal service impacts. Thus, the proposed project would have a *less than significant* impact on the landfill capacity. No mitigation is required.

Threshold	Would the project fail to comply with applicable federal, state, and local statutes and regulations related to solid waste?
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Impact 4.12-7 Long-term cumulative development under the implementation of the Transit Zoning Code (SD 84A and SD 84B) would comply with all applicable federal, state, and local statutes and regulations related to solid waste. This is considered a *less-than-significant* impact.

As described above, the *California Integrated Waste Management Act of 1989* (AB 939) requires that local jurisdictions divert at least 50 percent of all solid waste generated by January 1, 2000. Per the City program, individual projects within the Transit Zoning Code (SD 84A and SD 84B) would be required to comply with the Source Reduction and Recycling Element (SRRE) program for diverting the solid waste. The City already diverts 60 percent of its solid waste generated and is well above the compliance levels. Under the SRRE program, implementation of the Transit Zoning Code (SD 84A and SD 84B) would be consistent with AB 939 as well. Thus, a *less-than-significant* impact would occur. No mitigation is required.

4.12.11 Cumulative Impacts

It is considered that, without approved specific plans for substantial expansion of the landfill facilities that serve the County, solid waste generation from approved and foreseeable cumulative projects in the project area vicinity would exacerbate regional landfill capacity issues in the future. That is, any additional solid waste incrementally added to existing facilities will decrease the amount of time until they are completely full. The implementation of source reduction measures would be required on a project-specific basis and recycling would partially address landfill capacity issues by diverting additional solid waste at the source of generation. In addition, the proposed expansion of the Bowerman Landfill to 11,500 tons/day will increase the life of the landfill until 2053. However, the landfill is still in the process of increasing capacity to accommodate future increases in solid waste, and these improvements are not yet in place. Therefore, long-term cumulative development under the Transit Zoning Code, (SD 84A and SD 84B) in combination with other development in the region, could contribute to insufficient permitted disposal capacity by contributing additional solid waste to regional landfills. Development under the proposed project would also contribute construction debris to regional landfills, increasing the cumulative effect. Therefore, the proposed project would be considered cumulatively and cumulative impacts with respect to the capacity of solid waste facilities would be considered a *significant and unavoidable* impact.

Energy

4.12.12 Environmental Setting

■ Electricity

Southern California Edison Company (SCE) is the primary distribution provider for electricity in the Transit Zoning Code (SD 84A and SD 84B) area.²³ SCE is a regulated electrical utility and as such maintains electrical facilities and infrastructure within the City and surrounding areas. Those facilities and infrastructure are expected to be used to provide service to the proposed project area under the applicable rules and tariffs approved by the California Public Utilities Commission (CPUC). Currently, SCE has no immediate plans for expansion within the City of Santa Ana, as most of the City is built out. However, every year SCE expands and improves existing facilities according to demand.

SCE derives its electricity from a variety of sources, as shown in Table 4.12-10 (2008 Southern California Edison Power Content). Nearly half of its electricity comes from natural gas, with renewable resources constituting another nearly 20 percent.

Table 4.12-10 2008 Southern California Edison Power Content	
Energy Resources	SCE Power Mix (projected)
Eligible Renewable	16%
Biomass & Waste	1%
Geothermal	9%
Small hydroelectric	2%
Solar	1%
Wind	3%
Coal	12%
Large Hydroelectric	7%
Natural Gas	46%
Nuclear	19%
Other	<0%
Total	100%

SOURCE: SCE 2008 Power Content Label.

The 2005 Integrated Energy Policy Report prepared by the California Energy Commission (CEC) summarizes California’s electrical and natural gas supplies. Despite improvements in power plant licensing, highly successful energy efficiency programs and continued technological advances, development of new energy supplies is not keeping pace with the State’s increasing demands. A key

²³ Southern California Edison. www.sce.com. Accessed January 7, 2010.

constraint in energy is the state's electricity transmission system. Under most circumstances, the State's power grid is able to reliably deliver energy to consumers; for the majority of the days during the year, adequate energy supplies are reliably provided to consumers. California's electricity demand is driven by short summer peaks, such that reducing peak demand is the essential factor in adequately planning for the state's electrical needs. These peak demands include a few hours to several days each year, such that managing demand, rather than developing supplies at new power plants for this limited time appears the most efficient method to meet state needs on peak days. The CEC has developed an action plan which includes increasing energy capacity in investor-owned utilities, incentives for combined heat and power projects (cogeneration), energy efficiency programs, and expansion of renewable energy programs.

■ Natural Gas

Southern California Gas Company (SCGC) provides natural gas service for the proposed project area. Natural gas is a "fossil fuel," indicating that it comes from the ground, similar to other hydrocarbons such as coal or oil. SCGC purchases natural gas from several bordering states.

California has not experienced a widespread natural gas shortage in many years. Current supplies are adequate to meet demands, although natural gas storage could be expanded to improve reliability. The state imports 87 percent of its statewide natural gas supply.

SCGC maintains medium pressure facilities in nearly every street of the City. Most of the major natural gas transmission pipelines within the project area are owned and operated by SCGC. Gas transmission lines are located throughout the Transit Zoning Code (SD 84A and SD 84B) area. The facilities found in the area are medium pressure (P=44 psig max) mains and are steel and plastic pipes primarily 2 to 6 inches in size (Baldwin 2007; SCGC 2007). SCGC customers have the option of purchasing their natural gas from a list of natural gas suppliers. The list of approved natural gas suppliers is available on the SCGC website, which is updated periodically (SCGC 2007). The Public Utilities Commission (PUC) regulates SCGC, who is the default provider required by State law, for natural gas delivery to the proposed project Area. SCGC has the capacity and resources to deliver gas except in certain situations that are noted in state law. As development occurs, SCGC will continue to extend its service to accommodate development and supply the necessary gas lines. SCGC does not base its service levels on the demands of the project area; rather it makes periodic upgrades to provide service for particular projects and new development. The gas consumption of the new development in the Transit Zoning Code area can be estimated only after building sizes and fuel requirements of gas appliances have been established. Approximately two months before construction commences on a project, SCGC requests that the developer contact them with detailed information about the project's natural gas requirements. If necessary, SCGC customizes pipelines and mains to better serve newly constructed facilities. The cost for such service differs from project to project. SCGC is continuously expanding its network of gas pipelines to meet the needs of new commercial and residential developments in Southern California.

4.12.13 Regulatory Framework

■ Federal

No federal policies related to energy apply to the proposed project.

■ State

California Code of Regulations Title 24

New buildings in California are required to conform to energy conservation standards specified in Title 24 of the California Code of Regulations (CCR). The standards establish “energy budgets” for different types of residential and nonresidential buildings, with which all new buildings must comply. The energy budget has a space-conditioning component and a water-heating component, both expressed in terms of energy (BTU) consumed per year. The regulations allow for trade-offs within and between the components to meet the overall budget.

Energy consumption of new buildings in California is regulated by the State Building Energy Efficiency Standards, embodied in Title 24 of the CCR. The efficiency standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building or individual agency permit and approval processes.

■ Local

City of Santa Ana General Plan- Energy Element

The Energy Element of the General Plan is designed to reduce consumption of non-renewable energy to support, develop, and utilize new energy sources. The following objectives are related to Electricity and Natural Gas services for the Transit Zoning Code (SD 84A and SD 84B) area.

- Objective 1.1** Reduce transportation-related energy consumption.
- Objective 1.2** Reduce land use related energy consumption.
- Objective 1.3** Reduce construction-related energy consumption.
- Objective 1.4** Increase public awareness of energy conservations needs and means.
- Objective 2.1** Utilize efficient new source of energy in City facilities and vehicles.
- Objective 2.2** Cooperate with other cities and regional agencies and private industry on resource and energy recovery projects.

Consistency Analysis

The Transit Zoning Code seeks to encourage energy conservation and efficient energy management practices. The Transit Zoning Code provides a development framework to support efficient modes of transportation and fixed facilities to encourage transit, bicycle transportation, and walking as alternative modes of transportation. Developments under the proposed Transit Zoning Code (SD 84A and SD 84B) would be required to comply with the energy conservation measures contained in Title 24, which would reduce the amount of energy needed for the operation of any buildings constructed as a part of the proposed project. The development projects within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) would implement energy conservation measures (such as energy-efficient lighting and microprocessor controlled HVAC equipment) to reduce the demand for electricity and natural gas as part of the project design. The Transit Zoning Code (SD 84A and SD 84B) would encourage use of energy efficient fixtures and high-performance design in nonresidential and residential building design and construction to reduce consumption of non-renewable energy to support, develop and utilize new energy sources. Electric and natural gas consumption practices within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) would be in accordance with current City regulations and practices. As such, the proposed project would be considered consistent with the goals and policies of the City's Conservation Element.

4.12.14 Project Impacts and Mitigation

■ Analytic Method

To determine impacts on electricity supply resulting from implementation of the Transit Zoning Code, the net increase in electricity and gas demands was determined to evaluate whether there will be an adequate and reliable source of energy for the proposed project and whether any infrastructure improvements would be necessary.

■ Thresholds of Significance

The following thresholds of significance address the impacts of a proposed project on energy resources. For purposes of this EIR, development under implementation of the Transit Zoning Code (SD 84A and SD 84B) may have a significant adverse impact on energy if it would result in any of the following:

- Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Encourage the wasteful or inefficient use of energy

■ Effects Found to Have No Impact

There are no Effects Found to Have No Impact with respect to energy.

■ Effects Found to Be Less Than Significant

Threshold	Would the project require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
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Impact 4.12-8 Long-term cumulative development pursuant to the Transit Zoning Code (SD 84A and SD 84B) could increase the demand for electricity and gas, but would not require or result in the construction of new energy production or transmission facilities, the construction of which could cause a significant environmental impact. This is considered a *less-than-significant* impact.

The state has recently experienced constraints related to energy supply and delivery. These constraints were generally limited to peak demand days during the summer months, such that for the majority of the days during the year, adequate energy supplies are reliably provided to consumers. Development under implementation of the proposed Transit Zoning Code (SD 84A and SD 84B) would increase use of electricity in the project area, in particular, the demand for electricity to light, heat, and air condition of the residential, commercial, and business development within the plan area.

On peak days, the increase in demand from implementation of future development under the proposed Transit Zoning Code (SD 84A and SD 84B) would contribute to electricity supply and delivery constraints. However, all future development would be constructed in compliance with Title 24 energy efficiency standards. The estimated demand for electricity for the proposed project is calculated in the Tables 4.12-11 (Net Increase in Electricity Demand for Buildout of the Transit Zoning Code Area).

Table 4.12-11 Net Increase in Electricity Demand for Buildout of the Transit Zoning Code Area			
Land Use	Electricity Demand Rates	Transit Zoning Code Net Buildout	
			Demand Rates
Retail	13.55 kWh/sf/yr	387,000 sf	5,240,850 kWh
Commercial	13.55 kWh/sf/yr	(124,000) sf	(1,680,200) kWh
Industrial	13.55 kWh/sf/yr	(990,000) sf	(13,414,500) kWh
Civic	12.95 kWh/sf/yr	(21,000) sf	(271,950) kWh
Residential	5,626.50 kWh/unit/yr	4,075 units	22,927,987 kWh
			12,802,187 kWh

SOURCE: SCAQMD CEQA Air Quality Handbook, 1993 kWh = kilowatt-hour; sf = square feet

By the time future development would be constructed under the proposed project, it is expected that some steps outlined in the CEC action plan will have been implemented to alleviate energy constraints. If these constraints do remain, they could be addressed through “rolling blackouts,” which are limited to specific geographic areas for a period of hours. Further, if energy constraints remain, they are a reflection

of the broad energy supply issues experienced by California as a whole, and not unique to the demands of the development in the City.

Further, the CEC licensed two additional power plants in 2001 that were anticipated to provide California with electrical energy supply capacity and the ability to meet peak load demand in excess of forecasts of regional energy supplies. Consequently, although the proposed project would result in an increased electricity demand in the City, additional energy demands resulting from the proposed project would be adequately met by current and planned infrastructure during most of the year. Further, development under the proposed Transit Zoning Code (SD 84A and SD 84B) would be required to comply with the energy conservation measures contained in Title 24, which would reduce the amount of energy needed for the operation of any buildings constructed as a part of the proposed project.

Additionally, the current electrical demand of the Transit Zoning Code (SD 84A and SD 84B) area is within the capacity limitations of the electrical facilities serving the City. Excluding any unforeseen problems, existing distribution resources have the ability to serve all existing customer loads in accordance with its rules and tariffs. The projected electrical demand of the project area and for build out under the proposed Transit Zoning Code (SD 84A and SD 84B) is expected to be within SCE's current 10-year load forecasts. Though SCE's total system demand is expected to continue to increase annually, excluding any unforeseen problems, SCE's plans for new distribution resources would be adequate to serve all existing and new customer loads throughout the next decade. However, to reduce any potential impacts associated with build out of the proposed project, SCE recommends the use of energy efficient and high-performance design for nonresidential and residential building design and construction. Therefore, future non-residential projects will be required to implement the following mitigation measure which utilizes SCE "Savings By Design" program. This program offers a "whole building" efficiency approach during the design phase of the project. It maintains a 15 percent exceedance of the requirements of Title 24. In addition, design assistance and developer incentives are included in this program.

MM4.12-3 Individual non-residential project applicants are encouraged to apply for Southern California Edison's "Savings By Design" program. The program is aimed at generating an overall reduction in energy use through design methods and incentive programs by maintaining a 15% or greater exceedance of Title 24.

Natural Gas

SCGC declares itself a "reactive" utility and will provide natural gas as customers request its services. SCGC has also indicated that an adequate supply of natural gas is currently available to serve additional development, and that the natural gas level of service provided to the City would not be impaired by buildout under the proposed Transit Zoning Code (SD 84A and SD 84B). Any expansion of service necessitated by implementation of the proposed project would be in accordance with SCGC's policies and extension rules on file with the PUC at the time contractual agreements are made. The natural gas demand projected for the proposed project is given in Table 4.12-12 (Natural Gas Demand for Net Buildout of the Transit Zoning Code Area). In addition, implementation of mitigation measure MM4.12-3 would reduce the demand for natural gas in nonresidential buildings.

Table 4.12-12 Natural Gas Demand for Net Buildout of the Transit Zoning Code Area			
Land Use	Electricity Demand Rates	Transit Zoning Code Buildout	
			Demand Rates
Retail	34.8 cf/sf/year	387,000 sf	13,467,600 cf
Commercial	34.8 cf/sf/year	(124,000) sf	(4,315,200) cf
Industrial	34.8 cf/sf/year	(990,000) sf	(34,452,000) cf
Civic	34.8 cf/sf/year	(21,000) sf	(730,800) cf
Residential	79,980 cf/unit/year	4,075 units	325,918,500 cf
Total			299,888,100 cf

SOURCE: SCAQMD CEQA Air Quality Handbook, 1993 cf = cubic feet; sf = square feet

Although the proposed project would result in the energy demand increases noted above, an adequate energy supply is anticipated to be available, as the electrical and gas supplies and infrastructure to support demand are provided as needed by SCE and SCGC. Therefore the proposed project would not substantially increase demands beyond the available supply. In the case of electricity, the cost associated with relocating the facilities, if required, would be borne by the developer. The developer would also be required to make contractual arrangements with SCGC prior to initiation of construction for natural gas. Prior to the issuance of grading permits, the project developer would coordinate with SCE/SCGC to determine the exact location of all underground and overhead electrical/gas facilities to ensure that all electrical/gas facilities and associated structures left on-site would be protected from damage.

The project-generated demand for electricity and natural gas would not be substantial in the context of overall demand within the City of Santa Ana and the state, and thus is not anticipated to require substantial upgrades or expansion of existing energy systems. While new development under implementation of the Transit Zoning Code would not increase the energy demand substantially, mitigation measures are suggested to promote conservation of energy to further reduce a potential impact.

MM4.12-4 Individual development projects within the boundaries of the Transit Zoning Code (SD 84A and SD 84B) shall implement energy conservation measures (such as energy-efficient lighting and microprocessor controlled HVAC equipment) to reduce the demand for electricity and natural gas as part of the project design. The energy conservation measures shall be subject to modification as new technologies are developed, or if current technology becomes obsolete, through replacement and shall be reviewed by the Planning and Building Agency prior to issuance of a building permit.

Implementation of the mitigation measure MM4.12-3 and MM4.12-4 would foster efficient energy use and ensure that a **less than significant** impact remains with respect to energy.

4.12.15 Cumulative Impacts

Development under the proposed Transit Zoning Code (SD 84A and SD 84B), in combination with all other development within the SCE and SCGC service areas, would result in the permanent and continued use of electricity and natural gas resources. However, as both SCE and SCGC are reactive providers, which supply electricity and natural gas services to customers at their request, it is assumed that they would be able to serve future developments under the proposed Transit Zoning Code (SD 84A and SD 84B) build out in combination with all projected future developments within their service boundaries. Therefore, the project's contribution to these impacts would not be cumulatively considerable and cumulative impacts to energy demand within the SCE and SCGC service boundaries would be *less than significant*.

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