4.14 UTILITIES AND SERVICE SYSTEMS

This section evaluates the effects of development under either Option 1 or Option 2 of the proposed project on utilities and service systems by identifying the anticipated demand for utilities, as well as existing and planned utility availability. For purposes of this EIR, utilities include domestic water supply, wastewater conveyance and treatment, and solid waste collection and disposal. In addition, although not identified in the Initial Study/Notice of Preparation (IS/NOP) prepared for the project, this section also analyzes electricity and natural gas utilities. Stormwater drainage facilities are discussed in Section 4.7 (Hydrology and Water Quality) of this report.

Data used to prepare this section were taken from the *Water Supply Assessment and Water Supply Verification for Bella Terra II* (WSA/WSV) (Hunsaker & Associates Irvine, Inc. 2008), the W*et Utilities Study* (PBS&J 2008) (Appendix I), as well as contacts with utility providers and City staff. Full bibliographic entries for all reference materials are provided in Section 4.14.14 (References) at the end of this section. All comments received in response to the IS/NOP circulated for the proposed project were taken into consideration during preparation of this EIR, and, if relevant, have been addressed in this section or others within this document.

Water Supply

4.14.1 Environmental Setting

Potable Water

The City of Huntington Beach provides potable water to the City and would serve the proposed project site.

Water Sources

The City's drinking water is a blend of surface water imported by the Metropolitan Water District of Southern California (MWDSC) via its member agency Metropolitan Water District of Orange County (MWDOC), and groundwater pumped from the Santa Ana River basin. MWDSC's imported water sources are the Colorado River and the State Water Project, which draws water from the San Francisco-San Joaquin Bay Delta. Groundwater comes from a natural underground reservoir managed by the Orange County Water District (OCWD) that stretches from the Prado Dam and fans across the northwestern portion of Orange County, excluding the communities of Brea and La Habra, and as far south as the El Toro "Y" (Huntington Beach 2006). Within the City, groundwater for potable use is produced from 10 operating wells currently in use that vary in depth from 306 feet to 996 feet, with production ranging from 500 gallons per minute (gpm) to 3,400 gpm. Total capacity of the ten wells is 25,050 gpm (Huntington Beach 2005c).

The three imported connections are with MWDSC. One connection (OC 9) enters Huntington Beach at Newland Street and Edinger Avenue, and has the capacity to deliver 6,300 gpm into the water system. The second connection (OC 35) is located at Springdale Street and Glenwood Drive with a capacity of 9,000 gpm. The third connection (OC 44) enters Huntington Beach at the Santa Ana River and Adams Avenue with a capacity of 6,700 gpm.

The City of Huntington Beach has four reservoirs with a total combined capacity of 55 million gallons (Figure 4.14-1 [Water Service Area and Water Supply Facilities]). Pumps draw water from the reservoirs and pressurize it into the water system during high demand periods. Overmyer has a capacity of 20 million gallons. Peck Reservoir has a capacity of 17 million gallons. Edwards Hill Reservoir is the newest facility and has a capacity of 9 million gallons. Springdale Reservoir has a capacity of approximately 9 million gallons.

Water Supply

The City of Huntington Beach supplies customers throughout the City of Huntington Beach and the Sunset Beach area of unincorporated Orange County. Figure 4.14-1 (Water Service Area and Water Supply Facilities) shows the City limits and service areas, as well as the location of key water supply facilities. The City obtains potable water from two sources: imported water and groundwater. In addition to these identified water supply sources, it is aggressive water conservation and efficient water use that will continue to allow the City to provide reliable service to its customers.

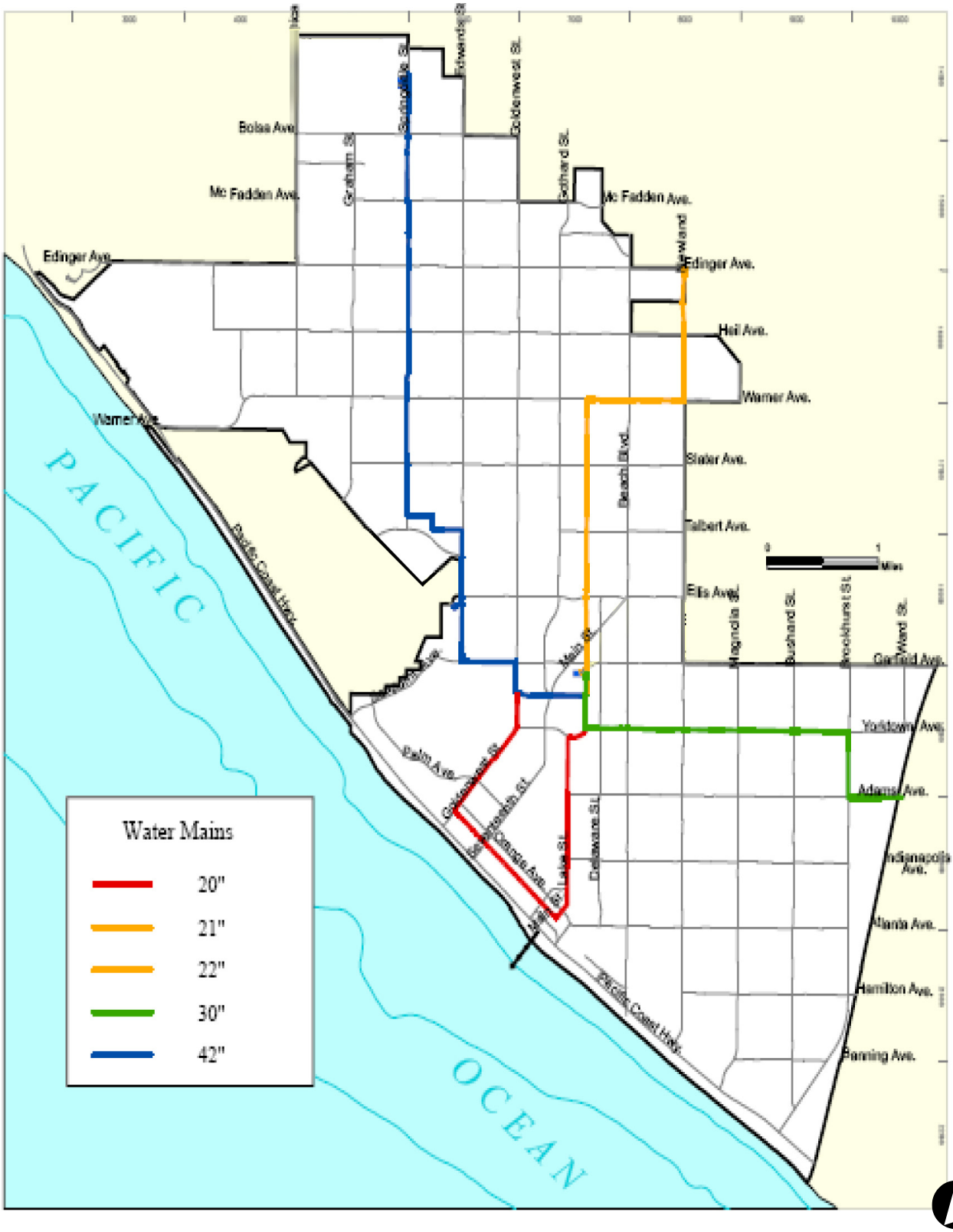
Historically, the City has utilized groundwater more than imported water to satisfy water system demands. Currently, the City receives approximately 75 percent of its water supply from groundwater wells accessing the Santa Ana River groundwater basin and approximately 25 percent of its supply from imported water from MWDOC. To ensure a lasting supply for the region, the basin is managed by the OCWD, and the City pays a replenishment assessment to the district for each acre-foot of water taken from the groundwater basin. Actual percentages of groundwater and imported water vary somewhat on an annual basis depending on the extent to which these programs are implemented.

Current and projected water supplies from imported water and groundwater are shown in Table 4.14-1 (Orange County Groundwater Basin Groundwater Spreading Systems).

Table 4.14-1 Orange County Groundwater Basin Groundwater Spreading Systems

System	*Area (acres)*	*Storage Capacity (AF)*	*Percolation Rate (cfs)*
Main River System	245	480	87–115
Off-River System	126	394	15–40
Deep Basin System	280	8,484	89–300
Burris Pit/Santiago System	373	17,500	106–210

SOURCE: City of Huntington Beach 2005 Urban Water Management Plan.



Source:City of Huntington Beach 2005 Urban Water Management Plan; Edited by PBS&J, 2008.

FIGURE **4.14-1**

Water Service Area and Supply Facilities

A number of conservation efforts are underway on the state-wide, regional, and local levels to further reduce water use. In a February 2008 press release from Governor Schwarzenegger regarding the Delta Vision Blue Ribbon Task Force, the Governor identified a plan under development to achieve a 20 percent reduction in per capita water use statewide by 2020. This plan encourages a more aggressive approach including the implementation of additional legislation.

On behalf of its member agencies, MWDOC's Water Use Efficiency Department administers programs to encourage the public to reduce their water use in the residential, commercial, industrial, and institutional sectors. A number of rebate programs offer consumer's financial incentives to reduce their water use including home appliance, synthetic turf, and landscape rebates. The City also became Signatory to the Memorandum of Understanding (MOU) regarding Best Management Practices (BMP's) for Urban Water Conservation within the California Urban Water Conservation Council (CUWCC). The City has been committed to implementing the CUWCC's established 14 cost-effective BMP's (including rebate programs, conservation programs, education and information programs, etc.) and its efforts are documented in Activity Reports.

Water Demand

Similar to other water supply agencies, the City estimates a range of different future water demands, including average-day and maximum-day, in order to adequately plan for anticipated growth. Average-day demands account for variations in water use over a period of time due to a variety of potential factors such as weather patterns and conservation measures, whereas maximum-day demands project the greatest anticipated amount of water that would be used per day.

As discussed in the 2005 Water Master Plan Update, the City has reached near full development and water usage for the City's service area has been relatively stable over the past five years. Although water production has been fairly consistent in the past, the City's future water average demands are projected to increase approximately 12 percent by 2025 as a result of planned development and re-development and the projected increase in population density. The average daily water consumption in the City is 32 mgd, with a minimum of 11 mgd and a maximum of 43 mgd of water used in 1995. Per the 2005 UWMP, the average daily consumption is approximately 109 gallons per day (gpd) per person (Huntington Beach 2005c). Average daily water demand for the City is projected to be approximately 24,760 gpm (35.65 mgd) in the year 2025 (Huntington Beach 2005b), an increase approximately 3.65 mgd over existing conditions.

For the purposes of determining supply and demand comparison for the proposed project, the higher water demand generator of the two development options, GPA/ZTA Option 2, was used. The projected water supplies and demands in normal, single dry, and multiple dry years are presented in Table 4.14-2, (Supply Demand Comparison for the Proposed Project in Normal Years [in AFY]) Table 4.14-3 (Supply Demand Comparison for the Proposed Project in Single Dry Years [in AFY]), and Table 4.14-4 (Supply Demand Comparison for the Proposed Project in Multiple Dry Years [in AFY]) respectively. The tables also include approximate water demands committed to various other City-approved development projects that were not reflected in the 2005 UWMP.

Table 4.14-2 Supply Demand Comparison for the Proposed Project in Normal Years (in AFY)

Normal Year	*2010*	*2015*	*2020*	*2025*	*2030*
Supply					
MWDOC Imported	13,620	13,320	14,170	13,470	12,780
Groundwater	24,300	24,540	24,790	25,040	26,260
Total Supply	*37,920*	*37,860*	*38,960*	*38,510*	*38,040*
Demand					
2005 UWMP Demand	34,710	35,060	35,410	35,770	36,090
Committed Demand	426	426	426	426	426
The Village at Bella Terra Net Increase	174	174	174	174	174
Total Demand	*35,310*	*35,660*	*36,010*	*36,370*	*36,690*
Supply/Demand Difference	*2,610*	*2,200*	*2,950*	*2,140*	*1,350*

SOURCE: PBS&J 2008 Wet Utilities Study.

Table 4.14-3 Supply Demand Comparison for the Proposed Project in Single Dry Years (in AFY)

Single Dry Year	*2010*	*2015*	*2020*	*2025*	*2030*
Supply					
MWDOC Imported	12,900	13,870	14,260	13,480	12,920
Groundwater	25,630	25,890	26,150	26,420	26,650
Total Supply	*38,530*	*39,760*	*40,410*	*39,900*	*39,570*
Demand					
2005 UWMP Demand	36,620	36,990	37,360	37,740	38,070
Committed Demand	449	449	449	449	449
The Village at Bella Terra Net Increase	184	184	184	184	184
Total Demand	*37,253*	*37,623*	*37,993*	*38,373*	*38,703*
Supply/Demand Difference	*1,277*	*2,137*	*2,471*	*1,527*	*867*

SOURCE: PBS&J 2008 Wet Utilities Study.

Table 4.14-4 Supply Demand Comparison for the Proposed Project in Multiple Dry Years (in AFY)

	Normal Years		*Multiple Dry Years*		
	2026	***2027***	***2028***	***2029***	***2030***
Supply					
MWDOC Imported	13,430	13,190	13,370	13,230	13,090
Groundwater	25,080	25,130	26,860	26,150	26,650
Total Supply	*38,420*	*38,320*	*40,230*	*39,380*	*39,740*
Demand					
2005 UWMP Demand	35,830	35,900	38,370	37,360	38,070
Committed Demand	426	426	455	442	449
The Village at Bella Terra Net Increase	174	174	186	180	184
Total Demand[e]	36,430	36,500	39,011	37,982	38,703
Supply/Demand Difference	1,990	1,820	1,219	1,398	1,037

SOURCE: PBS&J 2008 Wet Utilities Study.

This supply and demand balance, based on the 2005 UWMP, shows that the City of Huntington Beach has an adequate supply of water to serve both projected and existing customers of the City. The WSA/WSV identifies that the total water supply available to the City during normal, single dry and multiple dry years within a 20-year projection will meet the estimated water demand of The Village at Bella Terra development, in addition to the demand of existing and other planned future uses.

A December 2007 federal court order imposed interim pumping restrictions on State Water Project (SWP) operations in the Sacramento-San Joaquin Delta (Delta). The pumping restrictions reduce the amount of future imported water supplies available to Southern California and eliminate the delivery of replenishment water (In-Lieu Program) indefinitely. Preliminary estimates predict that MWDSC could lose up to 30 percent of its Delta supplies as a result of this decision. The interim pumping restrictions will remain in effect until a new biological opinion is due in September 2008; however, water supply issues will remain and plans to address the Delta's problems are in progress. The conclusion of sufficient supply does not address the potential 30 percent reduction of imported water; however, the City's conservation programs and statewide efforts are targeting increased water efficiency and conservation of over 20 percent. The conservation and efficiency efforts will increase the supply reliability. Additionally, water-saving features in residential units could reduce indoor residential water demand factors by about 35 percent. The goal of the City is to aim for an indoor water use demand factor of 45 gallons per capita per day (gpcd) for new projects.

Infrastructure

As discussed above, the City's water distribution system is connected to MWDSC transmission mains at OC-9, OC-35, and OC-44 located respectively along the northeast, northwest, and southeast sides of the City. In addition, there are approximately 51,700 water distribution structures maintained by the City's

Department of Public Works. They range in size from ¾ inch to 10 inches in diameter. The area of the City is approximately 28 square miles ((Huntington Beach 2008).

The City's off-site backbone water system and the water improvements currently in place on–site from the Bella Terra Mall development (Phase I) will provide some of the infrastructure necessary to provide water service to the proposed project site. The existing off-site domestic water system includes water supply from the north via an existing 8- to 10-inch pipeline in Center Avenue and available water supply from the south through an existing 12-inch pipeline in Edinger Avenue. The on-site water system includes existing pipelines that served the previous development on the project site and the currently completed Bella Terra Mall (Phase I) development.

Recycled Water

In January 2008, the OCWD implemented an innovative, cost-effective and reliable Groundwater Replenishment System. This System is a water project that provides northern and central Orange County with a new supplemental source of safe, high-quality water. The Groundwater Replenishment System takes highly-treated sewer water and purifies it to levels that meet state and federal drinking water standards as pure as bottled water. It uses a three-step process that includes reverse osmosis, which is used by manufacturers of bottled water, as well as microfiltration, ultraviolet light and hydrogen peroxide advanced oxidation treatment. The water will then be used to keep the ocean out of our groundwater basin and be percolated into deep aquifers where it eventually becomes part of our natural drinking water supply. The Groundwater Replenishment System water exceeds all federal and state drinking water standards. The underground basin provides more than half of the water used by north and central Orange County.

Water Treatment Facilities

As previously stated, approximately 25 percent of the City's potable water supply is imported water purchased from the MWD. The City receives treated imported water from the MWD Robert B. Diemer Filtration Plant in northern Orange County, and the Joseph Jensen Filtration Plant in Granada Hills. The Diemer Filtration Plant receives a blend of Colorado River water from Lake Mathews and the State Water Project (SWP) water through the Yorba Linda Feeder. Currently, the Diemer Filtration Plant has an operating capacity of 520 mgd and current flows are approximately 213 mgd. The Jensen Filtration Plant receives only SWP water with no water received from the Colorado River, and currently has an operating capacity of 750 mgd and current flows are approximately 420 mgd (MWD 2008).

4.14.2 Regulatory Framework

Federal

Federal Safe Drinking Water Act

Enacted in 1974 and implemented by the EPA, the federal *Safe Drinking Water Act* imposes water quality and infrastructure standards for potable water delivery systems nation-wide. The primary standards are health-based thresholds established for numerous toxic substances. Secondary standards are recommended thresholds for taste and mineral content.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) established primary drinking water standards in the *Clean Water Act* Section 304. States are required to ensure that potable water retailed to the public meets these standards. Standards for a total of eighty-one individual constituents have been established under the *Safe Drinking Water Act* as amended in 1986. The USEPA may add additional constituents in the future. State primary and secondary drinking water standards are promulgated in CCR Title 22 Sections 64431–64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance.

State

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 Urban Water Management Plans (UWMP) to describe their efforts to promote efficient use and management of water resources. The City's 2005 UWMP is intended to serve as a general, flexible, and open-ended document that periodically can be updated to reflect changes in the Orange County water supply trends, and conservation and water use efficiency policies. The UWMP, along with the City's Water Master Plan and other City planning documents, is used by City staff to guide the City's water use and management efforts through the year 2010, when the UWMP is required to be updated.

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….

SB 221 (Kuehl Bill) and SB 610 (Costa Bill)

Signed into law on October 2001 and effective beginning in January 2002, SB 221 and SB 610 serve to ensure that certain land developments in California must be accompanied by an available and adequate supply of water to serve those developments. Serving as companion measures, SB 610 and SB 221 seek to promote more collaborative planning between local water suppliers and cities and counties.

SB 221 requires the legislative body of a city, county, or local agency to include, as a condition in any tentative map that includes a subdivision, a requirement that a sufficient water supply shall be available to serve the subdivision. A "subdivision" is defined as a proposed residential development of more than 500 dwelling units or one that would increase, by at least 10 percent, the number of service connections of a public water system having less than 5,000 connections. "Sufficient water supply" is defined as the total water supplies available during normal, single-dry, and multiple-dry years within a twenty-year projection that will meet the projected demand of a proposed subdivision. SB 221 ensures that collaboration on finding the needed water supplies to serve a new large subdivision occurs before construction begins.

SB 610 requires additional factors to be considered in the preparation of urban water management plans and water supply assessments. SB 610 requires all urban water suppliers to prepare, adopt, and update an urban water management plan that, essentially, forecasts water demands and supplies within a certain service territory. In addition, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912(a)) subject to CEQA.

Local

General Plan Utilities Element

The City's General Plan Utilities Element (1996) focuses on the City's water supply, sanitation treatment, storm drainage, solid waste disposal, natural gas, electricity, and telecommunications systems. Applicable goals and policies of this element related to water supply and treatment systems and facilities include the following:

Goal U1 Provide a water supply system that is able to meet the projected water demands; upgrade deficient systems and expand water treatment, supply, and distribution facilities; and pursue funding sources to reduce the cost of water provision in the City.

Objective U.1.1 Maintain a system of water supply distribution facilities capable of meeting existing and future daily and peak demands, including fire flow requirements, in a timely and cost-efficient manner.

Policy U.1.1.1 Monitor the demands on the water system, manage the development to mitigate impacts and/or facilitate improvements to the water supply and

distribution system, and maintain and expand water supply and distribution facilities.

Objective U.1.2 Ensure that existing and new development does not degrade the City's surface waters and groundwater basins.

Policy U.1.2.1 Require that existing and new development contain safeguards and mitigation measures preventing degradation.

Policy U.1.2.2 Require new developments to connect to the sewer system.

Objective U.1.3 Minimize water consumption rates through site design, use of efficient systems, and other techniques.

Policy U.1.3.2 Continue to require the incorporation of water conservation features in the design of all new construction and site development.

Objective U.1.4 Ensure the costs of improvements to the water supply, transmission, distribution, storage and treatment systems are borne by those who benefit.

Policy U.1.4.1 Require the cost of improvements to the existing water supply and distribution facilities necessitated by new development be borne by the new development benefiting from the improvements, either through the payment of fees, or the actual construction of the improvements in accordance with State Nexus Legislation.

Consistency Analysis

Implementation of the proposed project would include the construction of necessary utilities on-site, which consist of water conveyance pipelines. The water lines associated with the proposed project are required to be sized appropriately for the anticipated design average day demand of 260.8 gpm and appropriate peaking factors. The distribution system has been evaluated to handle the required fire flows of three hydrants at 4,000 gpm. In addition, it is anticipated that the increased demand would not result in necessary upgrades to the water treatment plants. In accordance with CEQA, the project is required to mitigate and reduce any and all impacts to both water supply and facilities. The project would be consistent with the goals, objectives, and policies contained in the General Plan.

4.14.3 Project Impacts and Mitigation

Analytic Method

To determine impacts on water supply resulting from future development under either Option 1 or Option 2 of the proposed project, this section includes an evaluation of whether the projected increase in water use at the project site falls within the City's projected water demands. It also includes an analysis of whether any infrastructure improvements would be necessary and whether there will be an adequate and reliable source of water for either Option of the proposed project.

Water conveyance and capacity were evaluated with the City's hydraulic water model. The City's model verified whether the City's existing off-site water infrastructure has sufficient conveyance capacity to meet the domestic and fire flow demands for the proposed project. The demand factors for the capacity analysis are based on design average flow with some demand factors varying from those used for the water supply analysis. Conservative demand factors are used for the capacity analysis to ensure adequate pipe sizing meets both domestic and fire flows. Based on the demand factors listed below, the proposed development would have a total design average demand of 55.7 gpm for 15.85 acres of residential and commercial (including restaurants) uses. Modeled domestic demand factors and fire flow distribution are summarized in Table 4.14-5 (Design Average Domestic Demand and Fire Flow Distribution for Water Conveyance and Capacity Analysis).

Table 4.14-5 Design Average Domestic Demand and Fire Flow Distribution for Water Conveyance and Capacity Analysis

Land Use	*Quantity*	*Demand Factor*	*Total Demand (gpm)*	*No. of Locations*	*Demand per Location (gpm)*
Domestic Demand Distribution					
Residential	538 DU	400 gpd/DU	149.4	3	49.8
		Subtotal	149.4	3	49.8
Restaurant	30,000 sf	1.5 gpd/sf	31.3	2	15.6
Commercial	384,255 sf	0.3 gpd/sf	80.1	2	40.1
		Subtotal	111.4	2	55.7
		Total	*260.8*		
Fire Flow Distribution					
N/A	*N/A*	*N/A*	*4,000*	*3*	*1,000 or 1,500*

SOURCE: PBS&J 2008 Wet Utilities Study.

Based upon current information available to the City, the number of proposed dwelling units, the size of the commercial portion of the development alternatives submitted, the City and State conservation and water efficiency objectives, and the associated water use, an average-day water use rate can be approximated, as illustrated by Table 4.14-6 (Water Demand for the Proposed Project for Water Supply Analysis).

Table 4.14-6 Water Demand for the Proposed Project for Water Supply Analysis

Land Use	*Quantity*	*Persons per DU*	*Demand Factor*	*Estimated Flow*
OPTION 1				
Residential	713 du	2	70 gpcd	99,820gdp
Restaurant	30,000 sf		1.5 gpd/sf	45,000 gpd
Commercial	108,085 sf		0.15 gpd/sf	16,213 gpd
Landscape	62,027 sf		0.01 gpd/sf	620 gpd
Subtotal				*161,653 gpd 181 AFY*
OPTION 2				
Residential	538 du	2	70 gpcd	75,320gdp
Restaurant	30,000 sf		1.5 gpd/sf	45,000 gpd
Commercial	384,255 sf		0.15 gpd/sf	57,638 gpd
Landscape	62,027 sf		0.01 gpd/sf	620 gpd
Subtotal				*178,578 gpd 200 AFY*

SOURCE: PBS&J 2008 Wet Utilities Study.

DU = dwelling unit, SF = square feet; gpd = gallons per day; AFY = acre-feet per year.

The net increase in water demand is the difference between demand on the project site accounted for in the 2005 Urban Water Management Plan and any additional demand required by implementation of the proposed project (see Table 4.14-6). Accounting for 26 AFY water demand in the 2005 UWMP, a net increase of approximately 155 AFY has been estimated for Option 1 (181 AFY–26 AFY) and 174 AFY has been estimated by the City of Huntington Beach for Option 2 (200 AFY–26 AFY).

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For the purposes of this EIR, implementation of the proposed project may result in a potentially significant impact if the proposed project would cause either of the following results:

- 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[57]

[57] This standard has been slightly modified from the text found in the 2008 CEQA Guidelines, Appendix G, for ease of comprehension.

Impacts and Mitigation Measures

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?

Impact 4.14-1 **Implementation of development under Option 1 or Option 2 of the proposed project 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 impact is *less than significant*.**

For the purposes of determining water conveyance infrastructure for the proposed project, the higher of the two development options, Option 2, was used and 30,000 sf of restaurant use was assumed.

Option 2

As illustrated in Table 4.14-6 (Water Demand for the Proposed Project for Water Supply Analysis) above, with approximately 15.85 acres associated with future development under Option 2, the estimated water supply demand for the proposed project under Option 2 would be approximately 200 AFY. Future development under Option 2 of the proposed project would allow for a maximum of 538 residential units, 30,000 sf of restaurant use and 384,255 sf of commercial uses. Crediting the 26 AFY of water demand already accounted for in the 2005 WMP and UWMP, future development under Option 2 would, therefore, result in a net increase of water demand of approximately 174 AFY (Hunsaker & Associates Irvine Inc. 2008).

Water Conveyance Infrastructure

With approximately 15.85 acres associated with the development of the proposed residential and commercial uses, the total design average demand for water conveyance and capacity for the proposed project would be approximately 260.8 gpm.

As indicated above, the City's off-site backbone water system and the water improvements currently in place on-site from the first phase of the Bella Terra development (Bella Terra Mall) will provide some of the infrastructure necessary to provide water service to the proposed project site. The existing off-site domestic water system includes water supply from the north via an existing 8- to 10-inch pipeline in Center Avenue and available water supply from the south through an existing 12-inch pipeline in Edinger Avenue. The on-site water system includes existing pipelines that served the previous development on the project site and the currently completed Bella Terra Mall (Phase I) development.

Fire flow demands placed at three proposed fire hydrants were evaluated using the City's hydraulic water model with a total fire flow demand of 4,000 gpm. The modeled static pressures dropped from 67 and 66 pounds per square inch (psi) to 59 and 58 psi, respectively, with pressure readings recorded at each point of connection described above. Since residual water pressures meet City of Huntington Beach Fire Department requirements and modeled results satisfy Water Standards design requirements, the City has determined there is sufficient conveyance capacity to meet the domestic water and fire flow demands of

the proposed project. Private on-site new pipelines and appurtenances are required; and off-site improvements to the existing infrastructure in the public right-of-way are required.

Construction of the on-site water system could require demolition of surface improvements and excavation activities typically done during the construction of any development. Future development of this infrastructure would adhere to existing laws and regulations, and the water conveyance infrastructure would be appropriately sized for the development of the project, which includes potable water, domestic irrigation, and fire flow demands. Improvements to the water system include the relocation, abandonment, and upsizing of a portion of the on-site pipeline including replacement of a portion of the 10-inch pipeline with 12-inch pipeline. A portion of the new pipelines will be public and maintained by the City, while the remaining portion of the pipelines will be private and maintained by the Applicant.

The City of Huntington Beach Fire Department (HBFD) requires specific fire-flow rates at each project site and specifies the residual pressure necessary at on-site fire hydrants. Due to the possibility of a fire occurring on any given day, the City's existing water system satisfies maximum-day demands occurring elsewhere throughout the water system and would also satisfy the required flow at the project site. Public and private fire hydrants would be installed with relocation of existing fire hydrants where required. A private water system would serve the private hydrants within the interior portion of the project site. Thus, upon completion of the proposed on-site water system infrastructure, which is required to adhere to the City's Water Standards and requirements, the City's domestic water system would provide adequate water supply and fire flows for future development under the proposed project. On-site water exhibits are provided in Appendix A of the Wet Utilities Study (Appendix I to the EIR). The impacts related to water conveyance infrastructure would be ***less than significant.***

Water Treatment Facilities

Future development under the proposed project site would be served with local groundwater and imported water supply purchased from MWD. The demand for groundwater generated by future development would not require additional treatment facilities as this water is treated at the well from which it originates. As previously mentioned, the City received approximately 75 percent of its water supply from groundwater wells and 25 percent from the MWD. Thus, for the purposes of this analysis, it is anticipated that the additional demand placed on either the Diemer Filtration Plant or the Jensen Filtration Plant would be approximately 25 percent of the total increase in water demand of 200 AFY (0.177 mgd), or 50 AFY (0.044 mgd).

As stated previously, the Diemer Filtration Plant has an operating capacity of 550 mgd and current flows are approximately 213 mgd, while the Jensen Filtration Plant currently has an operating capacity of 750 mgd and current flows of approximately 420 mgd. If the future development's imported water demand were treated solely at either Filtration Plant, this increase would represent far less than one percent (0.00029 percent at Diemer and 0.000215 percent at Jensen) of the remaining capacities of both facilities.

Because future development under the proposed project would represent such a small amount of the remaining operating capacity at both Diemer Filtration Plant and Jensen Filtration Plant, it is anticipated

that the existing plants could adequately serve the additional demand generated by future development without requiring expansions to these facilities. This impact is considered ***less than significant*** and no mitigation is required.

Threshold	Would the project 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?

Impact 4.14-2 **Implementation of development under Option 1 or Option 2 of the proposed project 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 impact is *less than significant*.**

Option 2

As discussed previously, implementation of development under Option 2 of the proposed project would result in a net increase in water demand of approximately 174 AFY (PBS&J 2008). As shown in Tables 4.14-2, 4.14-3, and 4.14-4 above, the projected water supplies and demands in normal, single dry, and multiple dry years, respectively, with the estimated 174 AFY net water demand increase indicates that the City of Huntington Beach has an adequate supply of water to serve The Village at Bella Terra Project, in addition to the demands of existing and other known and planned future uses. However, in December 2007, a federal court order imposed interim pumping restrictions on State Water Project (SWP) operations in the Sacramento-San Joaquin Delta (Delta). The pumping restrictions reduce the amount of future imported water supplies available to Southern California and eliminate the delivery of replenishment water (In-Lieu Program) indefinitely. Preliminary estimates predict that the MWDSC could lose up to 30 percent of its Delta supplies as a result of this decision. The conclusion of sufficient supply does not address the potential 30 percent reduction of imported water.

As stated earlier, the interim pumping restrictions will remain in effect until a new biological opinion is due in September 2008; however, water supply issues will remain and plans to address the Delta's problems are in progress. The City's conservation programs and statewide efforts are targeting increased water efficiency and conservation of over 20 percent. The conservation and efficiency efforts will increase the supply reliability. Additionally, water saving features inside residential units could reduce indoor residential water demand factors by about 35 percent. The goal of the City is to aim for an indoor water use demand factor of 45 gpcd for new projects. The WSA/WSV and Wet Utilities Study, included in Appendix I, includes more detail about water conservation and efficiency efforts. In order to address these issues, the following Condition of Approval has been identified.

The project Applicant shall submit building plans for approval to the City of Huntington Beach to incorporate the following project conditions to ensure that conservation and efficient water use practices are implemented for the proposed project:

- Waterless urinals in the commercial and restaurant areas
- Ultra low-flush toilets in the residential units
- Low-flow shower heads and faucet aerators in the residential units

- Aggressive drought tolerant landscape design with the option to use artificial turf
- Efficient irrigation including smart irrigation controllers and separate irrigation meters
- Ultra water efficient clothes washers and other appliances in common areas
- Incentives for new residents to purchase ultra water efficient appliances
- Provide signs throughout the proposed project site to wisely use water
- Make available resources to residents and tenants on how to use water efficiently

The City's conservation programs and statewide efforts would increase water supply reliability. In addition, implementation of the Condition of Approval would ensure that the City has a sufficient supply of water available to serve the proposed development, thereby reducing the impact to ***less than significant***. No mitigation measures are required.

Wastewater

4.14.4 Environmental Setting

The City owns, operates, and maintains a wastewater collection system that includes gravity pipelines, manholes, lift stations, and force mains. This system serves over 95 percent of the areas within the City, and several small areas within the cities of Westminster, Seal Beach, Newport Beach, and Fountain Valley. The City's wastewater system would provide service to the proposed project (HB 2005c).

Infrastructure

The City's collection system is comprised of approximately 385 miles of wastewater pipelines ranging in size from 6 to 30 inches in diameter. Approximately 85 percent of the City's wastewater pipelines are 8 inches in diameter. Due to the City's generally flat topography, the City also operates and maintains twenty-eight lift stations ranging in capacity from approximately 80 gpm to 1,350 gpm. These facilities lift sewage from low points in the collection system to manholes at higher locations (Huntington Beach 2003). Combined transport of the City's wastewater collection system is an estimated 24.3 mgd (Huntington Beach 2003).

The Orange County Sanitation District (OCSD) is responsible for receiving, treating, and disposing of the wastewater generated in central and northwest Orange County, including the City's wastewater. In this regional management capacity, OCSD owns, operates, and maintains the majority of the "backbone" wastewater collection trunk pipelines. OCSD's regional wastewater pipelines generally range in size from 21 to 108 inches in diameter and collect the City's wastewater at multiple connections. In addition to these collection facilities, OCSD has two lift stations and Wastewater Treatment Plant No. 2, which is located within the City and described below. As such, the City's local system generally discharges to larger OCSD facilities to convey wastewater to the local treatment plant.

Given the growth within OCSD's service area, OCSD is currently upsizing a number of collection system pipelines to provide additional capacity. One of these key facilities is the 108-inch Bushard Trunk Sewer, which runs through the City to OCSD's Plant No. 2 (HB 2003). The sewer system consists of twelve trunk sewer systems ranging in size from 12 to 96 inches in diameter and collectively over 500 miles long.

Additionally, there are thirty-nine sewer interconnections and eighty-seven diversions to maximize conveyance of flows through the system. Twenty pump stations are used to pump sewage from lower lying areas to the treatment plants (HB 2005c).

Currently the project site is served by an existing 10-inch sewer lateral that connects to a 10-inch stubout connected to the existing 69-inch OCSD sewer trunk line in the Old Hoover Street railroad right-of way. The stub-out location is in Edinger Avenue. The City has requested from the OCSD to increase the existing 10-inch stubout connection to 12 inches in size so that a 12-inch replacement lateral could be installed for future development at the Village at Bella Terra project site (HB 2008). Additionally, the City is requesting a second 12-inch point of connection for future development at the site. The City has also requested the OCSD to confirm that there is adequate sewer capacity in the existing 69-inch OCSD trunk line in the Old Hoover Street railroad right-of-way.

Treatment Plants

OCSD manages wastewater collection and treatment for approximately 471 square miles in central and northwest Orange County, which includes 21 cities, 3 special districts, and 2.4 million residents. OCSD has two operating facilities that treat wastewater from residential, commercial, and industrial sources in central and northwest Orange County. OCSD's Reclamation Plant No. 1 is located in the City of Fountain Valley about four miles northeast of the ocean and adjacent to the Santa Ana River. 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 (HB 2005c).

Treatment 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 (HB 2005c).

Current capacity for Reclamation Plant No. 1 is 218 mgd of wastewater, with an average day flow of 120 mgd. Current capacity for Treatment Plant No. 2 is 168 mgd. The quantities of wastewater are generally proportional to the population and water use in the service area. Wastewater generated by the City is 2005 was approximately 21 mgd. By 2030, wastewater generated by the City is expected to increase to nearly 26 mgd (HB 2005c).

4.14.5 Regulatory Framework

Federal

Federal Water Pollution Control Act (Clean Water Act)

The major piece of federal legislation dealing with wastewater is the federal *Water Pollution Control Act*, which is designed to restore and preserve the integrity of the nation's waters. The federal *Water Pollution Control Act*, popularly known as the *Clean Water Act*, is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Enacted originally in 1948, the Act was amended numerous times until it was reorganized and expanded in 1972. It continues to be amended almost every year. In addition to the federal *Water Pollution Control Act*, other federal environmental laws regulate the location, type, planning, and funding of wastewater treatment facilities.

State

Operation of Wastewater Treatment Plant No. 2 is subject to regulations set forth by the California Department of Health Services and the California State Water Resources Control Board.

Regional

Regional Water Quality Board

Under the Santa Ana Regional Water Quality Control Board (SARWQCB) National Pollutant Discharge Elimination System (NPDES) permit system, all existing and future municipal and industrial discharges to surface waters within the City would be subject to regulations. The Orange County NPDES permit requires that all development within the City is subject to the provisions of the Orange County NPDES Storm Water Permit. The NPDES storm water permit was issued by SARWQCB for municipal storm water and urban runoff discharges within Orange County, and incorporated cities therein.

Local

City of Huntington Beach Municipal Code

The *City of Huntington Beach Municipal Code* Chapter 14.25 contains regulations associated with stormwater and urban runoff management. Permits are required for any alterations or connections to the existing sewage system, and for industrial waste dischargers.

General Plan Utilities Element

The City's General Plan Utilities Element (1996) focuses on the City's water supply, sanitation treatment, storm drainage, solid waste disposal, natural gas, electricity, and telecommunications systems. Applicable goals and policies of this element related to wastewater systems and facilities include the following:

Goal U2 Provide a wastewater collection and treatment system which is able to support permitted land uses; upgrade existing deficient systems; and pursue funding sources to reduce costs of wastewater service provision in the City.

Objective U.2.1 Ensure the City provides and maintains a wastewater collection and treatment facilities system which adequately conveys and treats wastewater generated by existing and planned development at maximized cost efficiency.

Policy U.2.1.1 Approve and implement development in accordance with the standards identified in the Growth Management Element.

Policy U.2.1.5 Maintain, upgrade, and expand existing wastewater collection and treatment facilities.

Policy U.2.1.6 Require that sewer capacity is available before building permits are issued for new development.

Objective U.2.2 Ensure the costs of wastewater infrastructure improvements are borne by those who benefit.

Policy U.2.2.1 Require the costs of improvements to the existing wastewater collection facilities, which are necessitated by new development, to be borne by the new development benefiting from the improvements; either through the payment of fees, or by the actual construction of the improvements in accordance with State Nexus Legislation.

Consistency Analysis

Development under either Option 1 or Option 2 of the proposed project would include the construction of necessary utilities on-site, including wastewater conveyance lines. The sewer lines would need to be sized appropriately for the anticipated flow of approximately 199,948 gpd of wastewater for development under Option 1 or 222,457 gpd of wastewater for development under Option 2 of the proposed project. As discussed in the impact analysis, it is anticipated that the increased flows from the proposed project would not result in required upgrades to the existing OCSD treatment plants. The construction of wastewater conveyance lines in accordance with the projected size and outflow of the project site would not conflict with the applicable goals, objectives, and policies of the City's General Plan Utilities Element.

4.14.6 Project Impacts and Mitigation

Analytic Method

To determine wastewater impacts associated with future development under either Option 1 or Option 2 of the proposed project, estimated future wastewater flows are compared to the capacity of the wastewater treatment plants to determine whether sufficient capacity exists and/or whether there is the need for additional wastewater treatment systems. The estimates of sewer flow are slightly higher than the estimates of water demand. Duty factors used for sewer generation rates were more conservative because they were prepared for sizing the conveyance system and for designing facilities. Actual wastewater generation on the project site would be closer to estimates of water demand. Table 4.14-7 (Estimated Sewer Flows for the Proposed Project) shows the estimated sewer flow calculations for future development at the Village at Bella Terra project site under either Option.

Table 4.14-7 Estimated Sewer Flows for the Proposed Project

Land use	*Quantity*	*Duty Factor*	*Estimated Flow*
Option 1			
Residential	713 du	187 gpd/du	133,331 gpd
Restaurants	30,000 sf	1.5 god/sf	45,000 gpd
Commercial	108,085 sf	0.2 gpd/sf	21,617 gpd
Total			*199,948 gpd 0.20 mgd*
Option 2			
Residential	538 du	187 gpd/du	100,608 gpd
Restaurants	30,000 sf	1.5 god/sf	45,000 gpd
Commercial	384,255 sf	0.2 gpd/sf	76,851 gpd
Total			*222,457 gpd 0.22mgd*
Peak Hourly Discharge	1.78(Qave)^0.92		0.442 mgd

SOURCE: City of Huntington Beach, The Village at Bella Terra PWQMP.

DU = dwelling unit, SF = square feet; gpd = gallons per day; mgd = million gallons per day; Q = discharge; ave = average.

Future development under Option 1 would yield an estimated wastewater of 199,948 gpd (0.20 mgd). Future development under Option 2 would yield an estimated wastewater generation of 222,457 gpd (0.22 mgd). For the purposes of determining the sufficiency of wastewater capacity for the proposed project, the higher of the two wastewater generating options, 0.442 MGD for GPA/ZTA Option 2, was used and 30,000 sf of restaurant use was assumed. Therefore, new wastewater discharges from the implementation of either Option 1 or Option 2 would place additional demands upon regional wastewater treatment facilities.

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For the purposes of this EIR, implementation of the proposed project may result in a potentially significant impact if the proposed project would cause either of the following results:

- 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
- Include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)[58]
- 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[59]

Impacts and Mitigation Measures

Threshold	Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Impact 4.14-3 **Implementation of development under Option 1 or Option 2 of the proposed project would not exceed wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board. This impact would be *less than significant*.**

As stated above, the NPDES permit system requires that all existing and future municipal and industrial discharges to surface waters within the City be subject to specific discharge requirements. Development under either Option 1 or Option 2 of the proposed project would not result in the discharge of wastewater to any surface water. Instead, operational discharges will be sent to the future project's sewer system, which would ultimately be treated at one or more of the OCSD wastewater treatment plants. The OCSD wastewater treatment plants are required to comply with their associated waste discharge requirements (WDRs). WDRs set the levels of pollutants allowable in water discharged from a facility.

Compliance with any applicable WDRs, as monitored and enforced by the OCSD, would ensure that development under either Option of the proposed project would not exceed the applicable wastewater

[58] According to the Citywide Urban Runoff Management Plan (2005), the City has included this threshold to the Initial Study Checklist Appendix G of the 2008 CEQA Guidelines in its CEQA preparation and review process for proposed projects. The Initial Study prepared for the proposed project did not incorporate this threshold; thus, it has been included in this EIR analysis.

[59] This standard has been slightly modified from the text found in the 2008 CEQA Guidelines, Appendix G, for ease of comprehension.

treatment requirements of the SARWQCB with respect to discharges to the sewer system. This would result in a ***less-than-significant*** impact. No mitigation measures are 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?

Impact 4.14-4 **Implementation of development under Option 1 or Option 2 of the proposed project would require new sewer connections, but could require or result in the construction of new or expanded wastewater conveyance systems. With implementation of MM4.14-1 this impact would be reduced to *less-than-significant* levels.**

The City of Huntington Beach Public Works Department and OCSD maintain the sanitary sewer system into which the proposed project would discharge. Future development under Option 1 of the proposed project would include 713 residential units, 108,085 sf of commercial uses, and 30,000 sf of restaurant uses. Development under Option 1 would increase the amount of wastewater transported by the City's sewer system by approximately 199,948 gpd (0.20 mgd). Future development under Option 2 of the proposed project would include 538 residential units, 384,255 sf of commercial uses, and 30,000 sf of restaurant uses. Development under Option 2 of the proposed project would increase the amount of wastewater transported by the City's sewer system by approximately 222,457 gpd (0.22 mgd).

As discussed under the Environmental Setting section above, the site is currently served by an existing 10-inch sewer lateral that connects to a 10-inch stubout connected to the existing 69-inch OCSD sewer trunk line in the Old Hoover Street alignment. The stubout location is in Edinger Avenue.

The Orange County Sanitation District has confirmed that there is capacity in the existing 69-inch trunk sewer. The City has a 10-inch connection at Edinger Avenue and Old Hoover Street at OCSD sewer station 472+50.94, but no permit from the OCSD has been confirmed for this connection. Prior to allowing additional connections to the OCSD sewer trunk, the condition of the existing manhole will need to be assessed to determine if rehabilitation of the manhole is required, and the capacity of the existing 10-inch sewer in Edinger Avenue will need to be confirmed by metering. If an upsized or additional connection is made to the OCSD sewer trunk, a permit will need to be obtained from OCSD. The City of Huntington Beach will need to be the permittee and applicant for the new or upsized sewer connection, and fees will need to be paid when the permits are obtained for inspection and the connection. Fees will be determined when the improvement plans are submitted by the City. The development will be responsible for the design, construction, and all costs associated with these improvements, including any fees required by the OCSD.

The existing 10-inch lateral that connects to the existing City of Huntington Beach 10-inch sewer line in Edinger Avenue is currently in service and is conveying effluent from the existing Bella Terra Mall development. It was not able to be determined if the existing sewer lateral is within an easement across the old Montgomery Ward property. The capacity of this existing 10-inch sewer lateral will need to be confirmed by metering to determine if upsizing of this existing lateral is necessary. If upsizing is

necessary, the development will be required to design and construct these improvements per the requirements of the City Engineer.

The existing city-owned 10-inch sewer line in Edinger Avenue between the existing 10-inch lateral and the manhole on the 69-inch OCSD sewer trunk line is currently over capacity. The short segment (approximately 10 lineal feet) will need to be analyzed to determine the appropriate size for capacity (to 12-inch diameter or larger) to accommodate existing and future flows. Mitigation measure **MM4.14-1** would ensure that proper sewer connections are provided for at the proposed project site.

MM4.14-1 *Prior to issuance of a building permit for the proposed project, the existing 10-inch stubout connection shall be replaced with a stubout, whose size will be determined with a sewer study, to the 69-inch OCSD trunk sewer line so that a replacement sewer lateral can be installed to service the development. The sewer study shall also evaluate the condition of the existing OCSD manhole in Edinger Avenue to determine if the manhole requires rehabilitation. In addition, a second 12-inch point of connection shall be constructed for additional capacity, if necessary.*

Construction of the wastewater collection systems would adhere to existing laws and regulations, and the infrastructure would be sized appropriately for the Option chosen for future development. Individual water and wastewater connections would occur during future development of the project site. In addition Mitigation measure **MM4.14-1** would ensure that proper sewer connections are provided for at the proposed project site. Therefore, this impact is considered ***less than significant***.

Threshold	Would the project include a new or retrofitted stormwater treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?

Impact 4.14-5 **Implementation of development under Option 1 or Option 2 of the proposed project would include new stormwater treatment control BMPs, the operation of which would not result in significant environmental effects. This impact is *less than significant*.**

Refer to Section 4.7 (Hydrology and Water Quality) for a detailed discussion of stormwater treatment.

Future development under either Option 1 or Option 2 of the proposed project would involve the construction and operation of stormwater treatment control Best Management Practices (BMPs) that would be identified in a Water Quality Management Plan (WQMP). The City has general/standard conditions of approval to protect receiving water quality from short- and long-term impacts of new development and significant redevelopment, which include the following City code requirements (CR) (HB 2005a).

CR4.14-1 *Prior to issuance of a grading permit, the Applicant shall demonstrate, by providing a copy of the Notice of Intent submitted to the State Water Resources Control Board (SWRCB) and a copy of the subsequent issuance of a Waste Discharge Identification number, that coverage has been obtained under the General Permit. Projects subject to this requirement shall also prepare, submit, and implement a Stormwater Pollution Prevention Plan.*

CR4.14-2 *Prior to issuance of certificate of occupancy, the Applicant shall demonstrate that all structural and non structural BMPs described in the WQMP have been installed and implemented in conformance with approved plans and specifications, and that all storm drain structures are clean and properly constructed.*

Since stormwater treatment control BMPs must be in conformance with approved plans and specifications of appropriate agencies, operations would not be anticipated to result in significant environmental effects including, but not limited to, vectors or odors. Therefore, development under either Option 1 or Option 2 of the proposed project would result in a ***less than significant*** impact due to stormwater treatment control operations. No 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 adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact 4.14-6 **Implementation of development under Option 1 or Option 2 of the proposed project 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 impact is *less than significant*.**

Wastewater Treatment Plant No. 2 has a capacity of approximately 168 mgd of wastewater, with a current flow of approximately 151 mgd. Wastewater generation would be estimated at approximately 199,948 gpd (0.20 mgd) under future development of Option 1 of the proposed project, which would minimally increase the demand upon regional wastewater treatment facilities. Similarly, wastewater generation would be estimated at approximately 222,457 gpd (0.22 mgd) under future development of Option 2 of the proposed project, which would also only minimally increase the demand upon regional wastewater treatment facilities.

The proposed project's wastewater flows would be treated by Reclamation Plant No. 1 (Chenoweth 2008). Current maximum treatment capacity for Reclamation Plant No. 1 is 218 mgd; on average, the plant treats approximately 120 mgd (Huntington Beach 2005). The plant is currently designed to provide primary treatment to 218 mgd of wastewater 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 (RWQCB). However, Reclamation Plant No. 1 is currently unable to treat all average daily flows to secondary treatment levels and there are no plans to expand the secondary treatment system.

The quantities of wastewater are generally proportional to the population and water use in the service area. Wastewater generated by the City in 2005 was approximately 21 mgd. By 2030, wastewater generated by the City is expected to increase to nearly 26 MGD (Huntington Beach 2005).

The remaining capacity at Reclamation Plant No. 1 is 98 mgd. The remaining capacity at Treatment Plant No. 2 is approximately 24 mgd. As such, the treatment plant would have more than adequate capacity to treat the additional 0.20 mgd of wastewater that would be generated under future development of Option 1 of the proposed project or the additional 0.22 mgd of wastewater that would be generated

under future development of Option 2 of the proposed project. The OCSD has confirmed that there is capacity in the existing 69-inch trunk sewer. Development under either Option would represent far less than 1 percent of the remaining capacity. However, it is likely that the impact on the wastewater treatment plant would be less, given the fact that wastewater treatment planning occurs on a large-scale basis in response to known and/or anticipated regional growth trends, rather than in response to any single project. In addition, OCSD has determined that they have plans to upgrade the facility to expand treatment capacity.

Consequently, construction or expansion of wastewater treatment facilities is not anticipated to be necessary to serve the project's needs. In addition, the proposed project would be required to adhere to existing laws and regulations associated with wastewater discharge and treatment requirements. Therefore, the project's impacts on wastewater treatment facilities are also considered ***less than significant***. No mitigation measures are required.

Solid Waste

4.14.7 Environmental Setting

Currently, Rainbow Disposal is the exclusive hauler of all solid waste for the City of Huntington Beach. Rainbow Disposal has an agreement with the City to haul commercial waste but will not take liquids or hazardous materials, such as paint, oil, solvents, chemicals, or tires per state law. In addition, they do not accept sod, manure, lumber, concrete, or construction debris. However, the County of Orange provides free household hazardous waste collection centers, one of which is located at the Rainbow Disposal Transfer Station in Huntington Beach, which is further discussed below.

Rainbow Disposal operates a Transfer Station, located at 17121 Nichols Street within the City of Huntington Beach, and two Materials Recovery Facilities (MRFs) through which all solid waste is processed. A transfer station is a solid waste facility where smaller refuse-collection vehicles dump their loads of waste onto a tipping floor. This waste is then placed into larger transfer vehicles for transport to the point of ultimate disposal. Use of this type of facility reduces hauling costs and also reduces the number of trucks on the highway. Rainbow Disposal's Transfer Station has a design capacity of 2,800 tons per day, and currently receives 1,800 to 2,000 tons per day. At maximum the Rainbow Disposal's Transfer Station is at approximately 71 percent utilization (Gordon 2008). At the MRFs, trash is mechanically and manually sorted in order to ensure that the maximum amount goes towards recycling and the minimum amount is separated for landfill disposal.

One MRF primarily processes residential solid waste, and the other MRF processes residential and quasi-industrial solid waste, including construction waste. Construction-related waste is processed at various steps including sorting at the site followed by sorting at the tipping deck at the MRF. Thus, construction-related solid waste is processed via a primary and secondary sort, while the majority of solid waste is processed solely through a secondary (or dirty) sort.

As of 2004, which represents the most recent data available, the City of Huntington Beach maintained a 65 percent diversion rate from the Orange County landfills, which exceeds the AB 939 requirement of 50 percent diversion of solid waste by the Year 2000 (CIWMB 2008b).

The Orange County Integrated Waste Management Department (IWMD) presently owns and operates three active landfills, including: Frank R. Bowerman Landfill in Irvine; Olinda Alpha Landfill in Brea; and Prima Deshecha Landfill in San Juan Capistrano. All three landfills are permitted as Class III landfills and have a combined design capacity of over 20,000 tons per day. Class III landfills accept only non-hazardous municipal solid waste for disposal; no hazardous or liquid waste can be accepted. Table 4.14-8 (Landfill Capacity) shows the existing capacities of each of these landfills, as well as their anticipated closure dates and annual usage.

Table 4.14-8 Landfill Capacity

Landfill	*Location*	*Current Remaining Capacity (Cubic Yards)*	*Maximum Capacity (Cubic Yards)*	*Estimated Close Date*	*Maximum Daily Load (tons)*	*Annual Usage (tons)*
Frank R. Bowerman	11002 Bee Canyon Access Road Irvine, CA 92602	59,411,872	127,000,000	2022	8,500	2,332,576
Olinda Alpha	1942 North Valencia Avenue Brea, CA 92823	38,578,383	74,900,000	2013	8,000	2,069,835
Prima Deshecha	32250 La Pata Avenue San Juan Capistrano, CA 92675	87,384,799	172,900,000	2067	4,000	814,488

SOURCE: CIWMB 2008c

The City is under contract to the County's IWMD to dispose of all waste to the County landfill system (not a particular facility) until the Year 2010. Presently, it is anticipated that the Orange County landfill system will have adequate capacity to operate until 2067. The Olinda Alpha Landfill is the closest facility to the proposed project site and would likely be the facility that accepts solid waste from the site. Frank R. Bowerman Landfill is permitted to receive a daily maximum of no more than 8,000 tons per day and is scheduled to close in approximately 2013. The Frank R. Bowerman Landfill is the second closest facility to the proposed project site. Frank R. Bowerman Landfill is permitted to receive a daily maximum of no more than 8,500 tons per day and is scheduled to close in approximately 2022. However, the IWMD is conducting a study that may extend the life and disposal capacity of the landfill. In particular, the Regional Landfill Options for Orange County (RELOOC) Strategic Plan—Frank R. Bowerman Landfill Implementation is currently being developed (RELOC 2006).

The California Integrated Waste Management Board (CIWMB) requires that all counties have an approved Countywide Integrated Waste Management Plan (CIWMP). To be approved, the CIWMP must demonstrate sufficient solid waste disposal capacity for at least fifteen years, or identify additional available capacity outside of the County's jurisdiction. To this end, the RELOOC program, a forty-year strategic plan being prepared by the IWMD, was created. RELOOC evaluates options for trash disposal for Orange County citizens and to ensure that waste generated by the County is safely disposed of and that the County's future disposal needs are met.

4.14.8 Regulatory Framework

Federal

There are no applicable federal laws, regulations, or policies that pertain to solid waste.

State

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*.

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.

AB 939—California Integrated Waste Management Act

In 1989, the State Legislature adopted the *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 requires that each county prepare a new IWMP. The Act further required each city to prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. Each SRRE includes a plan for achieving a solid waste goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. Recently, a number of changes to the municipal solid waste diversion requirements under the *Integrated Waste Management Act* were adopted, including a revision to the statutory requirement for 50 percent diversion of solid waste. Under these provisions, local governments shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

Local

Countywide Integrated Waste Management Plan

The CIWMP consists of many parts. Each city in the County, and the unincorporated area of the County, have several planning documents that outline their proposals for waste diversion methods. Specifically, the CIWMP is composed of the Siting Element, Summary Plan, Source Reduction and Recycling Element, Nondisposal Facility Elements, and the Household Hazardous Waste Element. All of these planning documents must be kept current and are submitted to the CIWMB for approval and

acceptance. The entity assigned with the task of overseeing the submittal of these documents is the County of Orange, Waste Management Commission/Local Task Force.

General Plan Utilities Element

The City's General Plan Utilities Element (1996) focuses on the City's water supply, sanitation treatment, storm drainage, solid waste disposal, natural gas, electricity, and telecommunications systems. Applicable goals and policies of this element related to solid waste management include the following:

Goal U 4 Maintain solid waste collection and disposal services in accordance with the California *Integrated Waste Management Act of 1989* (AB 939), and pursue funding sources to reduce the cost of the collection and disposal services in the City.

Objective U 4.1 Ensure an adequate and orderly system for the collection services and the disposal of solid waste to meet the demands of new and existing development in the City.

Policy U 4.1.1 Maintain adequate solid waste collection for commercial, industrial, and residential developments in accordance with state law.

Consistency Analysis

Future development under either Option 1 or Option 2 of The Village at Bella Terra project would be served by Rainbow Disposal, which has been contracted by the City to maintain their solid waste disposal needs in accordance with the above goal, objective, and policy. The project Applicant would work with Rainbow Disposal to meet this goal. No actions brought forth by the proposed project would be in conflict with the goals outlined in the Utilities Element of the City's General Plan.

4.14.9 Project Impacts and Mitigation

Analytic Method

To determine the amount of solid waste generated by either Option 1 or Option 2 of the proposed project, solid waste generation factors identified by the CIWMB are applied to the square footage of both Options of the proposed project, as presented in Table 4.14-9 (Solid Waste Generated from Existing General Plan/Zoning Designations and Project Buildout). To determine solid waste impacts associated with future development under the proposed project, estimated future solid waste generation amounts are compared to the total anticipated remaining capacity at landfills that serve the City.

Table 4.14-9 Solid Waste Generated from Existing General Plan/Zoning Designations and Project Buildout

Option 1

Land Use	Solid Waste Generation Rates (lbs/unit/day)	Existing General Plan/Zoning Designations		Option 1 Buildout		Net Difference	
		Units	Waste Generated (lbs/day)	Units	Waste Generated (lbs/day)	Units	Waste Generated (lbs/day)
Commercial	0.006 lbs/sf/day	345,213 sf	2,071	108,085 sf	649	237,128	1423
Restaurant	0.005 lb/sf/day	—	—	30,000 sf	150	-30,000	-150
Residential	4 lbs/dwelling unit/day	396 du	1584	713 du	2852	-317	-1268
	Total		*3,655 lbs/day (1.83 tons/day)*		*3,651 lbs/day (1.83 tons/day)*		*5 lbs/day (0.0025 tons/day)*

Option 2

Land Use	Solid Waste Generation Rates (lbs/unit/day)	Existing General Plan/Zoning Designations		Option 2 Buildout		Net Difference	
		Units	Waste Generated (lbs/day)	Units	Waste Generated (lbs/day)	Units	Waste Generated (lbs/day)
Commercial	0.006 lbs/sf/day	345,213 sf	2,071	384,255 sf	2306	-39,042	-234
Restaurant	0.005 lb/sf/day	-		30,000 sf	150	-30,000	-150
Residential	4 lbs/dwelling unit/day	396 du	1584	523 du	2092	-127	-508
	Total		*3,655 lbs/day (1.83 tons/day)*		*4,548 lbs/day (2.27 tons/day)*		*892 lbs/day (0.45 tons/day)*

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

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would do either of the following:

- Comply with federal, state, and local statutes and regulations related to solid waste
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid disposal needs[60]

Effects Not Found to Be Significant

The following issue areas were determined to result in less-than-significant or no impacts according to the Initial Study prepared for the project.

[60] These standards have been slightly modified from the text found in the 2008 CEQA Guidelines, Appendix G, for ease of comprehension.

Threshold	Would the project comply with federal, state, and local statutes and regulations related to solid waste?

As a condition of approval, the project would be required to comply with all federal, state and local statutes and regulations related to solid waste handling, transport and disposal during construction and long-term operation. No impact would occur, and no further analysis of this issue is required in this EIR.

Impacts and Mitigation

Threshold	Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact 4.14-7 **Implementation of development under Option 1 or Option 2 of the proposed project would not generate solid waste that exceeds the permitted capacity of landfills serving the City of Huntington Beach. This impact is *less than significant*.**

Option 1

As identified under the Analytic Method above, future development under Option 1 of the proposed project is estimated to produce approximately 3,651 pounds per day (lbs/day), or approximately 1,332,615 lbs/year, of solid waste. This translates to a generation rate of approximately 1.83 tons of solid waste per day and 667.95 tons of solid waste per year for future development under Option 1.

Rainbow Disposal's Transfer Station has a design capacity of 2,800 tons per day, and current utilization ranges between 53 and 71 percent. For purposes of this analysis, and assuming a worst-case scenario of 71 percent utilization, the daily solid waste contribution to this transfer station under Option 1 would be less than one tenth of a percent at approximately 0.0009 percent of its entire design capacity. Utilization of the transfer station would remain at 71 percent under future development of Option 1. Rainbow Disposal is capable and willing to accept all commercial waste in addition to all construction waste generated by either Option 1 or Option 2 of the proposed project (Gordon 2008). In addition, the two MRFs sort and separate all waste and recycle all appropriate materials further reducing the waste generation going to the landfills.

As discussed previously, there are three landfills that could serve the project site, which have a design capacity of 4,000, 8,000, and 8,500 tons per day. Based on landfill capacity, the solid waste contribution of 1.83 tons per day to any of the three landfills that serve the project site is less than one percent of their allowed daily capacity.

With Rainbow Disposal willing to accept all commercial and construction waste from the project site and with sufficient current and future landfill capacity, the solid waste impacts resulting from implementation of Option 1 of the proposed project is considered ***less than significant***. No mitigation is required.

Option 2

As identified under Analytic Method above, future development under Option 2 of the proposed project is estimated to produce approximately 4,548 lbs/day, or approximately 1,660,020 lbs/year, of solid waste. This translates to a generation rate of approximately 2.27 tons of solid waste per day and 830.01 tons of solid waste per year for future development under Option 2. Again assuming a worst-case scenario of 71 percent utilization of Rainbow Disposal's Transfer Station, the daily solid waste contribution to this transfer station under Option 2 would be less than one tenth of a percent at approximately 0.0011 percent of its entire design capacity, and the solid waste contribution of 2.27 ton per day to any of the three landfills serving the proposed project is less than one percent of their allowed daily capacity. Therefore, for the reasons discussed above under Option 1, the solid waste impacts resulting from future development of Option 2 of the proposed project is also considered ***less than significant***. No mitigation is required.

Energy

4.14.10 Environmental Setting

For the purposes of this analysis, energy resources consist of electricity and natural gas. Electricity in the proposed project area is provided to the City by Southern California Edison (SCE), while The Gas Company provides natural gas services.

Electricity

The 2005 Integrated Energy Policy Report prepared by the California Energy Commission (CEC) summarizes the state of California's electrical and natural gas supplies. Despite improvements in power plant licensing, enormously 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 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, expansion of renewable energy programs.

SCE derives its electricity from a variety of sources, as shown in Table 4.14-10 (Southern California Edison Power Content). Nearly half of its electricity comes from natural gas, with renewable resources constituting another nearly 20 percent.

Table 4.14-10 Southern California Edison Power Content

Energy Resources	*SCE Power Mix (projected)*
Eligible Renewable	19%
Biomass and Waste	2%
Geothermal	11%
Small hydroelectric	1%
Solar	1%
Wind	4%
Coal	11%
Large Hydroelectric	4%
Natural Gas	49%
Nuclear	17%
Other	<1%
Total	*100%*

SOURCE: Tran 2004 Percentages are estimated annually by the California Energy Commission based on electricity sold to California consumers during the previous year.

Natural Gas

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.

Natural gas is provided to the region by The Southern California Gas Company (SCGC), which provides service to 19 million people in California. The SCGC receives its supply of natural gas from several sources: Southern California, Northern California, and out-of-state suppliers. All natural gas services are regulated by the California Public Utilities Commission (CPUC).

4.14.11 Regulatory Framework

Federal

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

State

California Code of Regulations (CCR) Title 24

New buildings in California are required to conform to energy conservation standards specified in Title 24 of the CCR. The standards establish "energy budgets" for different types of residential and non-residential buildings, which all new buildings must comply with. The energy budget has a space-conditioning component and a water-heating component, both expressed in terms of energy

(British thermal units [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. The City requires all new buildings to meet Title 24 standards.

Local

General Plan Utilities Element

The City's General Plan Utilities Element (1996) focuses on the City's water supply, sanitation treatment, storm drainage, solid waste disposal, natural gas, electricity, and telecommunications systems. Applicable goals and policies of this element related to gas and electricity services and facilities include the following:

Goal U 5 Maintain and expand service provision to City of Huntington Beach residences and businesses.

Objective U 5.1 Ensure that adequate natural gas, telecommunication, and electrical systems are provided.

Policy U 5.1.1 Continue to work with service providers to maintain current levels of service and facilitate improved levels of services.

Policy U 5.1.2 Continue to underground above ground electrical transmission lines.

Consistency Analysis

Future development under Option 1 or Option 2 of the proposed project would include the construction of necessary energy infrastructure on site. As discussed below, an adequate supply of electricity is anticipated to be available to serve either option of the proposed project. Further, either option of the proposed project would comply with the provisions of Title 24 of the CCR. As such, either option of the proposed project would be designed to conserve energy. Also, because SCE is currently in the process of upgrading its transmission systems, it is anticipated that the electricity demand generated by either option of the proposed project could be supplied without the need for additional construction or expansion of energy facilities beyond that which was previously planned. Therefore, either option of the proposed project would not conflict with the applicable goals, objectives, and policies of the City's General Plan Utilities Element.

4.14.12 Project Impacts and Mitigation

Analytic Method

To determine whether or not future development under Option 1 or Option 2 of the proposed project would result in impacts on electricity and natural gas supplies, the projected increase in energy demand for each utility was analyzed and calculated using a per-square-foot consumption rate. As shown in Table 4.14-11 (Projected Electricity Demand), the anticipated electricity demand associated with future development under Option 1 is 6,899,746.25 kilowatt-hours per year (kWh/year), and the anticipated electricity demand associated with future development under Option 2 is 9,657,212.25 kWh/year.

Table 4.14-11 Projected Electricity Demands

Land Use	*Electricity Demand Rates*	*Specific Plan Buildout*	*Demand Rates*
Option 1			
Commercial	13.55 kWh/sf/yr	108,085 sf	1,464,551.75 kWh/year
Restaurant	47.45 kWh/sf/r	30,000 sf	1,423,500 kWh/year
Residential	5,626.50 kWh/unit/yr	713 units	4,011,694.50 kWh/year
Total			*6,899,746.25 kWh/year*
Option 2			
Commercial	13.55 kWh/sf/yr	384,255 sf	5,206,655.25 kWh/year
Restaurant	47.45 kWh/sf/r	30,000 sf	1,423,500 kWh/year
Residential	5,626.50 kWh/unit/yr	538 units	3,027,057 kWh/year
Total			*9,657,212.25 kWh/year*

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

As shown in Table 4.14-12 (Projected Natural Gas Demand), the anticipated natural gas demand associated with future development under Option 1 is 92,542,098 cubic feet per year (cf/year) and the anticipated natural gas demand associated with future development under Option 2 is 88,156,314 cf/year.

To determine potential impacts on energy supplies resulting from future development under either Option 1 or Option 2, the projected increase in electricity demand was presented to the utility providers to evaluate whether or not there would be an adequate and reliable source of electricity and natural gas for either Option, and whether or not any infrastructure improvements would be necessary.

Table 4.14-12 Projected Natural Gas Demand

Land Use	Electricity Demand Rates	Specific Plan Buildout	
			Demand Rates
Option 1			
Commercial	34.8 cf/sf/year	108,085 sf	3,761,358 cf/year
Restaurant	1,058.5 cf/sf/year	30,000 sf	31,755,000 cf/year
Residential	79,980 cf/unit/year	713 units	57,025,740 cf/year
Total			*92,542,098cf/year*
Option 2			
Commercial	34.8 cf/sf/year	384,255 sf	13,372,074 cf/year
Restaurant	1,058.5 cf/sf/year	30,000 sf	31,755,000 cf/year
Residential	79,980 cf/unit/year	538 units	43,029,240 cf/year
Total			*88,156,314 cf/year*

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

Thresholds of Significance

The following thresholds of significance are based on Appendix F of the 2008 CEQA Guidelines, which sets forth guidelines with regard to addressing impacts of a proposed project on energy resources. The IS/NOP prepared for the project did not evaluate potential impacts of the proposed project on electricity and natural gas utilities. As such, effects of the proposed project on these two service systems are covered in the EIR. For the purposes of this EIR, implementation of the proposed project may result in a potentially significant impact if the proposed project would cause either of the following results:

- 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

Impacts and Mitigation

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?

Impact 4.14-8 **Implementation of development under Option 1 or Option 2 of the proposed project could increase the demand for electricity, and could require or result in the construction of new energy production or transmission facilities. This impact is *less than significant*.**

Option 1

Electricity

Future development under Option 1 of the proposed project would result in approximately 108,085 sf of commercial uses, 30,000 sf of restaurant uses and 713 residential units. As such, implementation of Option 1 of the proposed project would increase the use of electricity at the project site, in order to light, heat, and air condition the future development. Based on the information provided in Table 4.14-11 above, the total annual electricity consumption by Option 1 of the proposed project is estimated to be approximately 6,899,746.25 kWh/year.

As discussed above, the State is currently experiencing constraints related to energy supply and delivery. These constraints are 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. Implementation of the proposed project would increase use of electricity in the project area, in particular, the demand for electricity to light, heat, and air condition for residential and commercial uses. On peak days, the incremental demand from the proposed project would contribute to electricity supply and delivery constraints. The proposed project 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.

SCE has invested $3 billion in its transmission and distribution system throughout its 50,000-square-mile service area and expects to invest an additional $11 billion in electricity infrastructure replacement and improvement over the next decade. The upgrading of existing equipment would occur while SCE accommodates significant customer growth. Over the period of its infrastructure project, SCE expects to add 45,000 to 50,000 new customers a year. SCE has applied to state and federal agencies for authorization to complete several major transmission expansion projects over the next six to ten years. These projects will help ensure adequate power flow and voltage for 13 million people while benefiting electricity customers in all eleven states of the western power grid (SCE 2008).

An adequate supply of electricity is anticipated to be available to serve Option 1 of the proposed project. Further, Option 1 of the proposed project would comply with the provisions of Title 24 of the CCR. As such, future development under Option 1 of the proposed project would be designed to conserve energy. Also, because SCE is currently in the process of upgrading its transmission systems, it is

anticipated that the electricity demand generated by future development under Option 1 could be supplied without the need for additional construction or expansion of energy facilities beyond that which was previously planned. Therefore, this impact would be ***less than significant***, and no mitigation is required.

Natural Gas

As shown above in Table 4.14-12, the demand for natural gas under the future development of Option 1 of the proposed project would be approximately 92,542,098 cf/year. Future development under Option 1 of the proposed project would be served by existing gas lines located in various locations within the vicinity of the project site.

Since the SCGC declares itself a "reactive" utility that will provide natural gas as customers request its services, the SCGC has indicated that an adequate supply of natural gas is currently available to serve Option 1 of the proposed project and that the level of service provided to the surrounding area would not be impaired by future development under Option 1. New natural gas lines to serve future development at the project site would be located underground and would be constructed in accordance with the SCGC's policies and extension rules on file with the CPUC at the time contractual agreements are made. Because the natural gas demand projected for future development under Option 1 would not exceed available or planned supply, and new infrastructure would not be required to serve the project site. Therefore, this impact would be ***less than significant***, and no mitigation is required.

Option 2

Electricity

Future development under Option 2 of the proposed project would result in approximately 384,255 sf of commercial uses, 30,000 sf of restaurant uses, and 538 residential units. Based on the information provided in Table 4.14-11 above, the total annual electricity consumption by Option 2 of the proposed project is estimated to be approximately 9,657,212.25 kWh/year. For the reasons discussed under Option 1 above, electricity demand generated by future development under Option 1 would be supplied without the need for additional construction or expansion of energy facilities beyond that which was previously planned. Therefore, this impact would be ***less than significant***, and no mitigation is required.

Natural Gas

As shown above in Table 4.14-12, the demand for natural gas under the future development of Option 2 of the proposed project would be approximately 88,156,314 cf/year. For the reasons discussed above under Option 1, the natural gas demand projected for development under Option 2 would not exceed available or planned supply, and new infrastructure would not be required to serve the project site. Therefore, this impact would be ***less than significant***, and no mitigation is required.

Threshold	Would the project encourage the wasteful or inefficient use of energy?

Impact 4.14-9 **Implementation of development under Option 1 or Option 2 of the proposed project would not result in the wasteful or inefficient use of energy by the proposed project. This impact is *less than significant*.**

As discussed under the Regulatory Framework section above, all new buildings are required to conform to the energy conservation standards specified in CCR Title 24. In order to conform to CCR Title 24, efficient energy use would be enforced and would ensure that a ***less-than-significant*** impact remains with respect to the wasteful or unnecessary use of energy under development of either Option 1 or Option 2 of the proposed project. No mitigation is required.

4.14.13 Cumulative Impacts: Water Supply, Solid Waste, Wastewater, and Energy

The geographic context for the City's analysis of cumulative water supply impacts is the service area of the Orange County Water District, including all anticipated cumulative growth represented by full implementation of the General Plan, and the specific projects identified by Table 3-3 (List of Related Development Projects) in Chapter 3 (Project Description).

The geographic context for cumulative impacts related to water is the City of Huntington Beach and part of the Orange County Water District which serves the City in order to supplement city wells and share programs.

The geographic context for cumulative impacts for all other utilities are the service areas for each of the utility providers (e.g., OCSD, OCIWMD, SCE, and the SCGC).

Water Supply

Development of cumulative projects within the City of Huntington Beach would demand additional quantities of water, depending on net increases in population, square footage, and intensity of uses. The City estimates that their water supplies will be enough to supply all projected growth through 2025, and with the addition of import connections they would have an excess water supply. Future development under Option 1 of the proposed project would require approximately 161,653 gpd (0.1616 mgd) of water, which would represent approximately 0.005 percent of the City's total water demand in 2025. Future development under Option 2 of the proposed project would require approximately 178,578 gpd (0.1786 mgd) of water, which would represent approximately 0.00559 percent of the City's total water demand in 2025. The WSA finds that although imported water supplies from the Delta are of significant concern, the reliable supplies provided by the Groundwater Basin, in conjunction with aggressive planning and conservation efforts on the State, regional, and local level, will ensure that the City will be able to provide a reliable source of water to accommodate its existing users and the additional demands on water supplies created by future development under either Option 1 or Option 2 for the 20-year projection. Therefore, future development under either Option 1 or Option 2 the proposed project would have a ***less-than-significant*** contribution to cumulative effects.

Development within the City will contribute to the cumulative demand that will result in the need for new or expanded infrastructure facilities. In turn, the City will construct new facilities or expand existing water supply and water treatment facilities, which could result in significant impacts to the environment. Due to the developed nature of the service area, it is expected that such expansion of water conveyance and/or treatment infrastructure would be minimal as existing infrastructure already exists. Because the proposed project would likely not require the expansion of existing infrastructure, only connections to existing conveyance infrastructure, and because there would be adequate capacity in the existing water treatment plant to serve future demand, the contribution of either Option 1 or Option 2 of the proposed project would not be cumulatively considerable. Therefore, either Option of the proposed project's contribution to cumulative water infrastructure impacts would be ***less than significant***.

Wastewater

The RWQCB, in connection with the implementation of the NPDES program, has imposed requirements on the treatment of wastewater and its discharge into local water bodies. Wastewater produced by either Option of the proposed project would meet these requirements due to treatment capacity available at Wastewater Treatment Plant No. 2 and the implementation of wastewater BMPs. Therefore, cumulative development would not result in the exceedance of SARWQCB wastewater treatment requirements, and future development under either Option would have a ***less-than-significant*** cumulative impact.

Cumulative growth in the service area could result in the need for additional conveyance infrastructure, and due to the continually developing nature of the service area, it is expected that such expansion of conveyance infrastructure could result in significant cumulative environmental effects.

Development of cumulative projects within the OCSD service area would generate additional quantities of wastewater, depending on net increases in population, square footage, and intensification of uses. These projects would contribute to the overall regional demand for wastewater treatment service. OCSD Wastewater Treatment Plant No. 2, which would be the primary treatment plant of the area around Huntington Beach, is currently operating at 151 mgd of wastewater. Although the plant is designed to treat approximately 168 mgd of wastewater, and thus is below operating capacity, according to OCSD, plans are currently in place to upgrade the plant's total treatment capacity. Future development under Option 1 would generate approximately 0.20 mgd of wastewater and future development under Option 2 would generate approximately 0.22 mgd of wastewater, which represents a very small fraction of one percent of the total current capacity of the plant. In addition, the City would continue to implement water conservation measures that would result in a decrease in wastewater generation. Therefore, since the existing treatment plants can currently accommodate excess capacity, this is considered to be a ***less-than-significant*** cumulative impact.

Solid Waste

Orange County IWMD has the ability to take up to 20,000 tons of solid waste a day into its three landfills. With the implementation of the AB 939 provisions, which mandates the reduction of solid waste disposal in landfills, the amount of solid waste disposed of in landfills by build-out is required to be

50 percent lower than actual waste production. The OC IWMD has stated that it has sufficient landfill capacity to accommodate future disposal needs of the County until 2035 based on its projections, which include expansion within the County. Future development under Option 1 of the proposed project would generate 1.83 tons of solid waste per day, while future development under Option 2 of the proposed project would generate 2.27 tons of solid waste per day. Solid waste generation under either Option 1 or Option 2 represents less than one percent of the allowed daily capacity of any of the three landfills serving the project site. Therefore, either Option of the proposed project would not create demands for solid waste services that exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the County would be considered ***less than significant***.

Since future development under the Village at Bella Terra project would involve residential and commercial uses, solid waste generated by future development would also contribute to greenhouse gas emissions. Treatment and disposal of municipal, industrial, and other solid waste produces significant amounts of CH_4. In addition to CH_4, solid waste disposal sites also produce biogenic CO_2 and non-methane volatile organic compounds (NMVOCs) as well as smaller amounts of N_2O, nitrogen oxides (NO_X) and carbon monoxide (CO). CH_4 produced at solid waste sites contributes approximately 3 to 4 percent to the annual global anthropogenic GHG emissions (IPCC 2006).[61]

Waste management practices in California have changed significantly over the last decade. State mandated waste minimization and recycling/reuse policies have been introduced to reduce the amount of waste disposed of in landfills, and alternative waste management practices to solid waste disposal on land have been implemented to reduce the environmental impacts of waste management. Also, landfill gas recovery has become more common as a measure to reduce CH_4 emissions from solid waste disposal sites.

CH_4 and CO_2 emissions from solid waste generated by the project were estimated based on formulas provided in the State Workbook: Methodologies for Estimating Greenhouse Gas Emissions. Estimates were obtained by multiplying the tons of solid waste annually disposed of at landfills by the percent of degradable material they contain, by the percent dissimilated, and by the pounds of gas produced per pound of biomass. Landfill gas is approximately 50 percent CH_4 and 50 percent CO_2. Total project emission of greenhouse gases from landfill material is shown in Table 4.14-13 (Project Operational Greenhouse Gas Emissions from Solid Waste) below. N_2O emissions from landfills are considered negligible (because the microbial environment in landfills is not very conducive to the nitrification and denitrification processes that result in N_2O emissions) and are, therefore, not explicitly modeled as part of greenhouse gas emissions generated through solid waste.

[61] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 3, Solid Waste Disposal, p. 3.1.

Table 4.14-13 Project Operational Greenhouse Gas Emissions from Solid Waste

Geographic Region and Emissions Source	Solid Waste tons/year[a]	CH_4 CO_2e (Tons)	CO_2(Tons)	Total CO_2e (Tons)
State of California (2005)	38,789,018	33,618,907	2,801,576	36,420,483
City of Huntington Beach (2005)	302,655	262,315	21,860	284,174
Option 1	678	587.6	49	637
Option 2	829	718.1	59.8	778

SOURCE: PBS&J, 2008. California Integrated Waste Management Board. California Waste Stream Profiles. http://www.ciwmb.ca.gov/Profiles/

a Landfill gas emissions = Tons landfilled x.22x.77x.67.

Under AB 32, the California Air Resources Board (CARB) has the primary responsibility for reducing greenhouse gas emissions. However, as discussed in Section 4.2 (Air Quality), the 2006 Climate Action Team (CAT) Report contains strategies that many other California agencies can implement. The CAT published a public review draft of *Proposed Early Actions to Mitigate Climate Change in California* in 2007.[62] Most of the strategies contained in the 2007 Report were also in the 2006 CAT Report or are similar to the 2006 CAT strategies. As the 2007 report is only a draft and is not yet final, this analysis will assess project compliance with the 2006 CAT Report strategies. The 2006 CAT Report strategies that apply to the project are contained in Table 4.2-21 in Section 4.2 of this EIR, as well as several additional strategies as identified by the State Attorney General's Office in its memo regarding global warming measures dated March 11, 2008.

Based on project-related greenhouse gas emissions estimates, it is not anticipated that the project emissions alone will substantially add to the global inventory of greenhouse gas emissions. In addition, the project would comply with all applicable policies, ordinances, and regulations that would reduce greenhouse gas emissions. Measures that would reduce air quality impacts of the project would also reduce the cumulative contribution of the project to greenhouse gas emissions. Further, the proposed project is an example of a project that was designed from the outset to minimize its greenhouse gas emissions and thereby reduce the City's contribution to global warming. From a geographic standpoint, the project is situated in close proximity of the urban core of Downtown Huntington Beach. It will provide residents of the City with the opportunity to live close to their jobs and close to public transportation lines. The Village at Bella Terra project is in line with the type of smart growth project the City wants to encourage. Because the project's contribution to greenhouse gas emissions in California would be low by comparison to a comparable level of development elsewhere, because the project would represent the type of growth that will help the State achieve consistency with AB 32, and because the project would incorporate all feasible greenhouse gas reduction measures (as documented in Section 4.2 of this EIR), cumulative impacts related to solid waste generation and greenhouse gas emissions would be considered ***less than significant***.

[62] State of California, Environmental Protection Agency, Climate Action Team. Climate Action Team Proposed Early Actions to Mitigate Climate Change in California. Draft for Public Review. April 20, 2007.

Energy

SCE has invested $3 billion in its transmission and distribution system throughout its 50,000-square-mile service area and expects to invest an additional $11 billion in electricity infrastructure replacement and improvement over the next decade. The upgrading of existing equipment would occur while SCE accommodates significant customer growth. Over the period of its infrastructure project, SCE expects to add 45,000 to 50,000 new customers a year. SCE has applied to state and federal agencies for authorization to complete several major transmission expansion projects over the next six to ten years. These projects will help ensure adequate power flow and voltage for 13 million people while benefiting electricity customers in all eleven states of the western power grid (SCE 2008). Because SCE is able to meet future projected demands, and an action plan has been identified to address energy issues on a broader scale, cumulative impacts would be less than significant. Project impacts under either Option would have a less-than-significant contribution to these impacts. This is considered to be a ***less-than-significant*** impact.

With regard to natural gas, development in the geographic area surrounding the project site would result in continued use of this resource. The area surrounding the project site is currently served by existing infrastructure that the proposed project would also use. The SCGC has stated that it can supply natural gas without jeopardizing other service commitments. The cumulative impact related to the supply of natural gas and to the need for additional or expanded facilities is less than significant, and the proposed project's contribution (under either Option) would not be cumulatively considerable. This is considered to be a ***less-than-significant*** impact.

Future development under either Option of the proposed project would use electricity for its residential and commercial components, which would contribute to greenhouse gas emissions. The generation of electricity through the combustion of fossil fuels typically yields CO_2 and, to a much smaller extent, CH_4 and N_2O. In order to determine emissions from electricity consumption, annual electricity use must be established. The project-related electricity emissions (for each Option) were estimated by using project electricity and natural gas use estimates noted below. The emissions factors for electricity use and natural gas combustion were obtained from the 2007 California Climate Action Registry. The greenhouse gas emissions from electricity generation can also be considered the "worst case" scenario in that they do not take into account anticipated regulatory changes on the manner of electrical energy generation that will reduce greenhouse gas emissions per kilowatt over time.

Greenhouse gas emissions from fossil fuel powered electricity generation and natural gas combustion are as shown in Table 4.14-14 (Project Operational Greenhouse Gas Emissions from Electricity Use) and Table 4.14-15 (Project Operational Greenhouse Gas Emissions from Natural Gas Combustion) below.

Table 4.14-14 Project Operational Greenhouse Gas Emissions from Electricity Use

Geographic Region and Emissions Source	Energy Use MWh/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)	CO_2 (Tons)[b]	CH_4M (Tons)[c]	CH_4 CO_2e (Tons)	Total CO_2e (Tons)
State of California (2005)	272,449,000	504	156,250	109,598,059	913	19,167	109,773,476
Option 1	6,900	0.0[d]	0.0	2,776	4.0[d]	0.5	2,780
Option 2	9,657	0.0[d]	0.0	3,885	5.5[d]	0.7	3,891

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

a Emissions Factor of 0.0037 was used for N_2O.

b Emissions Factor of 804.54 was used for CO_2.

c Emissions Factor of 0.0067 was used for CH_4.

d Value is equal to or less than 0.04 tons.

Table 4.14-15 Project Operational Greenhouse Gas Emissions from Natural Gas Combustion

Geographic Region and Emissions Source	Energy Use Therms/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)[a]	CO_2 (Tons)[a]	CH_4M (Tons)[a]	CH_4 CO_2e (Tons)[a]	Total CO_2e (Tons)
State of California (2005)[b]	13,039,000,000	144	44,556	75,888,858	8,480	178,080	76,111,494
Option 1	925,421	0.01[c]	0.60	5,386	3.2	12.6	5,402
Option 2	881,563	0.01[c]	0.57	5,131	3.0	12.0	5,146

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

a Emission factors taken from California Climate Action Registry General Reporting Protocol, Version 2.2, March 2007; Appendix C, Table C1

b Statewide Natural Gas Use taken from California Energy Commission's California Energy Demand 2008-2016 Staff Report.

c Value is equal to or less than 0.04 tons.

As indicated above under the Cumulative Solid Waste discussion, the Village at Bella Terra project is in line with the type of smart growth project the City wants to encourage. Because the project's contribution to greenhouse gas emissions in California would be low by comparison to a comparable level of development elsewhere, because the project would represent the type of growth that will help the State achieve consistency with AB 32, and because the project would incorporate all feasible greenhouse gas reduction measures (as documented in Section 4.2 [Air Quality] of this EIR), cumulative impacts related to energy consumption and greenhouse gas emissions would be considered ***less than significant***.

4.14.14 References

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