5.14 UTILITIES AND SERVICE SYSTEMS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Proposed Project to impact utilities and services systems. Utilities and services systems include water supply and distribution systems; wastewater (sewage) conveyance and treatment; storm drainage systems; solid waste collection and disposal; and other public utilities. Impacts to hydrology (e.g., flooding) and water quality can be found in Section 5.7, *Hydrology and Water Quality*.

The analysis in this section is based, in part, on response from the service providers included in Appendix G of this DEIR and the following technical report:

- Midtown Specific Plan Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality, Fuscoe Engineering, July 1, 2015

A complete copy of this technical study is included in Appendix E to this DEIR.

5.14.1 Wastewater Treatment and Collection

5.14.1.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) establishes regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters. Under the CWA, the U.S. Environment Protection Agency (EPA) is authorized to set wastewater standards and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that generate discharges that go directly into Waters of the United States. The federal Clean Water Act, United States Code, Title 33, Sections 1251 et seq. requires wastewater treatment of all effluent before it is discharged into surface waters.

Local

County Sanitation Districts of Los Angeles County

Capital improvements to the County Sanitation Districts of Los Angeles County (LACSD) water reclamation plants are funded from connection fees charged to new developments, redevelopments, and expansions of existing land uses. The connection fee is a capital facilities fee used to provide additional conveyance, treatment, and disposal facilities (capital facilities) required by new users connecting to the Sanitation District's sewerage system or by existing users who significantly increase the quantity or strength of their wastewater discharge. The Connection Fee Program ensures that all users pay their fair share for any necessary expansion of the system (Raza 2013). Estimated wastewater generation factors used in determining connection fees in LACSD's 22 member districts are set forth in the Connection Fee Ordinance for each

respective district available on LACSD's website. Most of the City of Long Beach, including the Project Site, is in District 3 of the Sanitation District; small portions of the west and northwest parts of the City are in Districts 8 and 1; respectively; and the easternmost part of the City is in District 19 (LACSD 2011).

Long Beach Water Department

In 2011, the Board of Water Commissioners adopted by resolution the "Rules, Regulations and Charges Governing Potable Water, Reclaimed Water, Sewer Service, and the Water Conservation and Water Supply Shortage Plan" (Rules, Regulations, and Charge), which govern potable water, reclaimed water, sewer service, and the water conservation and water supply shortage plan provided by the Long Beach Water Department (LBWD 2011a).

In accordance with Part 18 (Sewer Capacity Charge) of the Rules, Regulations, and Charges, new residential and commercial development in the City is required to pay a sewer capacity fee. Commercial (all added plumbing fixtures) and residential uses (new units only) are required to pay the fees set forth in Appendix B of the Rules, Regulations, and Charges, which are currently set at $97.31 for both of these land uses (Long Beach 2014).

Existing Conditions

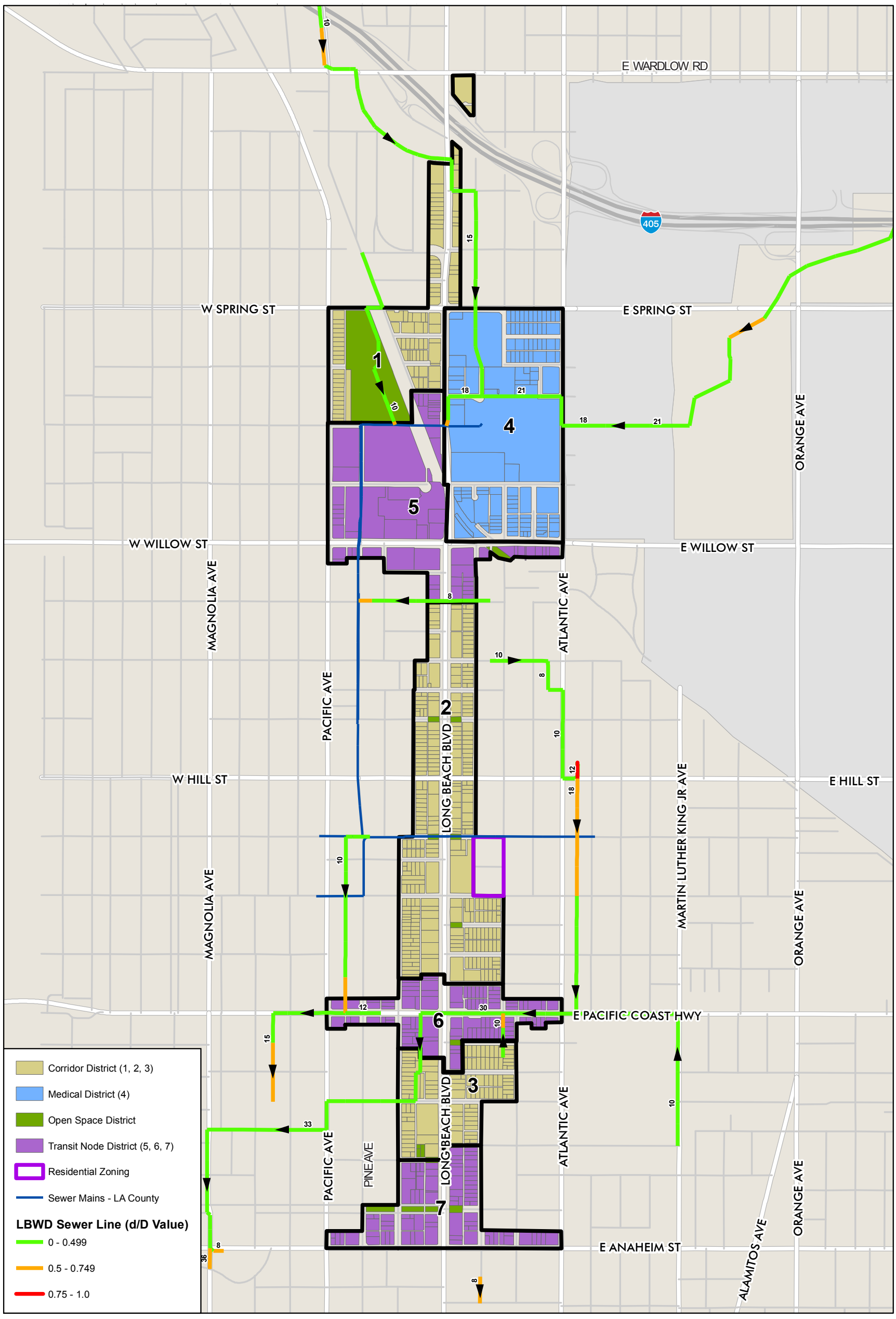
Wastewater Collection

The Long Beach Water Department operates and maintains the City's sewers. Sewer mains in the Project Site range from 4 to 33 inches in diameter; all the sewer mains onsite ultimately discharge to the west into a Sanitation District trunk sewer crossing the Los Angeles River at West 16th Street. This main sewer trunk runs to the Joint Water Pollution Control Plant (JWPCP) in the City of Carson for treatment. Existing sewer facilities within the Project Site are described in detail the Infrastructure Technical Report included as Appendix E to this DEIR. Figures 9A-9C of the Infrastructure Technical Report illustrate the existing City of Long Beach and Sanitation District sewer system facilities within the study area.

Existing Deficiencies

Overall, the majority of the sewer system serving the Project Site is within design capacity (< 0.5 d/D or <0.75 d/D dependent on size) under existing conditions. However, a few existing deficiencies in the sewer system (i.e., sewer segments that are currently flowing above the design capacity) within the Project Site were identified in the Infrastructure Technical Report (see Appendix E). The deficiencies are listed in Table 5.14-1, *Existing Sewer Capacity Deficiencies within the Project Site*, and mapped in Figure 5.14-1, *Existing Sewer Capacities and Deficiencies in Project Site*.

Figure 5.14-1 - Existing Sewer Capacities and Deficiencies in Project Site
5. Environmental Analysis



Source: Fuscoe, 2015

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Table 5.14-1 Existing Sewer Capacity Deficiencies within the Project Site

District	Sewer[1]		
	Roadway	Diameter in Inches	Length in Feet
Transit District 5	East 25th Street	8	151
Transit District 6	Near Pine Avenue	10	404
Transit District 6	Pasadena Avenue	10	164

Source: Fuscoe Engineering 2015.
[1] The design capacity for all sewers listed is 0.5 flow to depth ratio (d/D). The existing flow to depth ratio in each of the three sewers is between 0.5 and 0.75, that is, above the design capacity.

Wastewater Treatment

Under the existing conditions, average daily sewer flows from the Project Site are estimated at 1.03 million gallons per day (Fuscoe 2015). Wastewater discharged from the Project Site is treated at LACSDS's JWPCP, which has capacity of 400 million gallons per day (mgd), and had average daily effluent flows of approximately 263 mgd in 2014 (LACSD 2015).

5.14.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-1 Would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-5 Would result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold U-1

This impact will not be addressed in the following analysis.

5.14.1.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-1: Project-generated wastewater could result in an impact on the City of Long Beach's and County Sanitation Districts of Los Angeles County's wastewater treatment and conveyance systems. [Thresholds U-2 (part) and U-5]

Impact Analysis: The potential impacts to wastewater treatment and conveyance systems resulting from the Proposed Project within each of the areas of the Project Site are addressed below.

Midtown Specific Plan Area

The Midtown Specific Plan would result in an increase in the number of residential units within the Midtown Specific Plan area to 3,619, approximately 1,700 more than existing conditions. The Midtown Specific Plan also increases potential commercial and employment building space to approximately 3 million square feet, a net increase of approximately 369,000 square feet over existing conditions. Additionally, the Midtown Specific Plan's buildout projections assume a small increase in the number of licensed hospital beds (27 beds) and the addition of a business hotel with up to 81 hotel rooms (see Table 3-1, *Land Use Projections for Midtown Specific Plan Area*). Detailed descriptions of land use assumptions by district for the Midtown Specific Plan area are provided in Section 3.6.1.2, *Description of the Project*, of Chapter 3, *Project Description*.

Wastewater Generation and Treatment Capacity

Due to the increase in development potential, the Midtown Specific Plan would result in an increase in wastewater generated within the Midtown Specific Plan area. As shown in Table 5.14-2, project buildout is estimated to increase wastewater generation onsite by 672,821 gallons per day (gpd; or 0.664 mgd), which equates to a 65 percent increase, compared to existing wastewater generation conditions in the Midtown Specific Plan area.

Table 5.14-2 Estimated Project Wastewater Generation

Project Area	District	Wastewater Generation in Gallons per Day			
		Proposed	Existing	Net Increase	Percent Net Increase
Midtown Specific Plan Area	Corridor 1	123,936	72,958	50,978	70%
	Corridor 2	306,105	293,798	12,307	4%
	Corridor 3	145,733	125,910	19,823	16%
	Medical 4	311,200	155,630	155,570	100%
	Transit 5	426,158	172,409	253,749	147%
	Transit 6	184,112	85,121	98,991	116%
	Transit 7	170,676	89,273	81,403	91%
	Subtotal	*1,667,920*	*995,099*	*672,821*	*68%*
Conventional Zoning Area	—	38,629	38,629	0	0%
Total	—	1,706,549	1,033,728	672,821	65%

Source: Fuscoe Engineering 2015.

As noted above, wastewater from the Midtown Specific Plan area is treated at LACSDS's JWPCP, which has capacity of 400 mgd, and had average daily effluent flows of approximately 263 mgd in 2014 (LACSD 2015). There is approximately 137 mgd residual capacity at the JWPCP, which is more than adequate to accommodate the net increase in wastewater generation from development that would be accommodated by the Midtown Specific Plan. Therefore, the Midtown Specific Plan would not require construction of new or expanded wastewater treatment facilities.

Sewer Conveyance System

Full implementation of the Midtown Specific Plan has the potential to increase sewer flows by 672,281 gpd (or 0.664 mgd) within the Midtown Specific Plan area (see Table 5.14-2). The increase in flows would be generally spread out among the various areas of the Midtown Specific Plan area, thereby potentially impacting numerous Long Beach and Sanitation District sewer lines.

Long Beach Conveyance System

In order to evaluate the impact of the Midtown Specific Plan on the City's sewer conveyance system, the City's sewer hydraulic model was updated to account for the increases in sewer flows. Specifically, flow in existing sewers within the Midtown Specific Plan area was modeled with estimated wastewater flow from buildout of the Midtown Specific Plan distributed into the sewer system. Based on the analysis conducted in the Infrastructure Technical Report (see Appendix F), several sewer deficiencies were identified within the Midtown Specific Plan area with implementation of the Midtown Specific Plan; deficient sewer lines with anticipated increased sewer pipe sizes are listed in Table 5.14-3 and mapped in Figure 5.14-2, *Deficiencies in Existing Sewers Relative to Project Buildout Wastewater Flows*.

Table 5.14-3 Sewer Deficiencies within Project Site Relative to Project Buildout Wastewater Flows

	Existing Sewer					
District	Roadway	Diameter in Inches	Length in Feet	Design Capacity[1]		Anticipated Pipe Size in Inches
Transit District 5	East 25th Street	8	1,168	0.75 – 1.0		10-12
Transit District 6	Near Pine Avenue	10	404	0.5 - 0.75		12-15
Transit District 6	Pasadena Avenue	10	164	0.5 - 0.75		12-15
Transit District 7	East Anaheim Street	8	1,111	0.75 – 1.0		10-12

Source: Fuscoe Engineering 2015.
[1] Design capacity flows are each expressed in flow to depth ratio (d/D).

Implementation of the Midtown Specific Plan would require the reconfiguration of the onsite private sewer system to support the development projects within each area of the Midtown Specific Plan area; additionally, development within the Midtown Specific Plan area would require upsizing of several key City sewer lines within the Midtown Specific Plan area to maintain required conformance with sewer design criteria. Specifically, buildout within the Midtown Specific Plan area would require replacement and upsizing of the

City sewer lines listed in Table 5.14-3 with the expanded sewer pipe sizes noted in this table. All of the sewer line replacements would be within existing roadways in soil already disturbed by construction of the roadways and existing utilities. Sewer line replacements and upsizing within the Midtown Specific Plan area are noted as project improvements (or project design features) in the Midtown Specific Plan, impacts of which are analyzed throughout Chapter 5 of this DEIR. For example, if implementation of upgrades is required, conformance with the General Construction Permit for Linear Projects would be followed, which serves to reduce the impacts of construction through the use of sediment and erosion based best management practices (see sediment and erosion impacts discussion in Section 5.7, *Hydrology and Water Quality*). Sewer line replacements and upsizing would not cause significant impacts additional to those identified elsewhere in Chapter 5, and no additional significant impact would occur.

Alternatively, site-specific sewer flow monitoring studies for individual development projects within the Midtown Specific Plan area may be implemented in lieu of the aforementioned sewer line replacements and upsizing to provide a more detailed analysis of the true flow depths over time to determine if the potential for surcharge conditions would occur. Site-specific studies may indicate sufficient capacity for the sewer lines identified above, as well indicate that they are above the design criteria (>0.75 d/D). Since the preparation of a site-specific sewer flow monitoring study is not a standard City requirement for development projects, it has been added as mitigation at the end of this section.

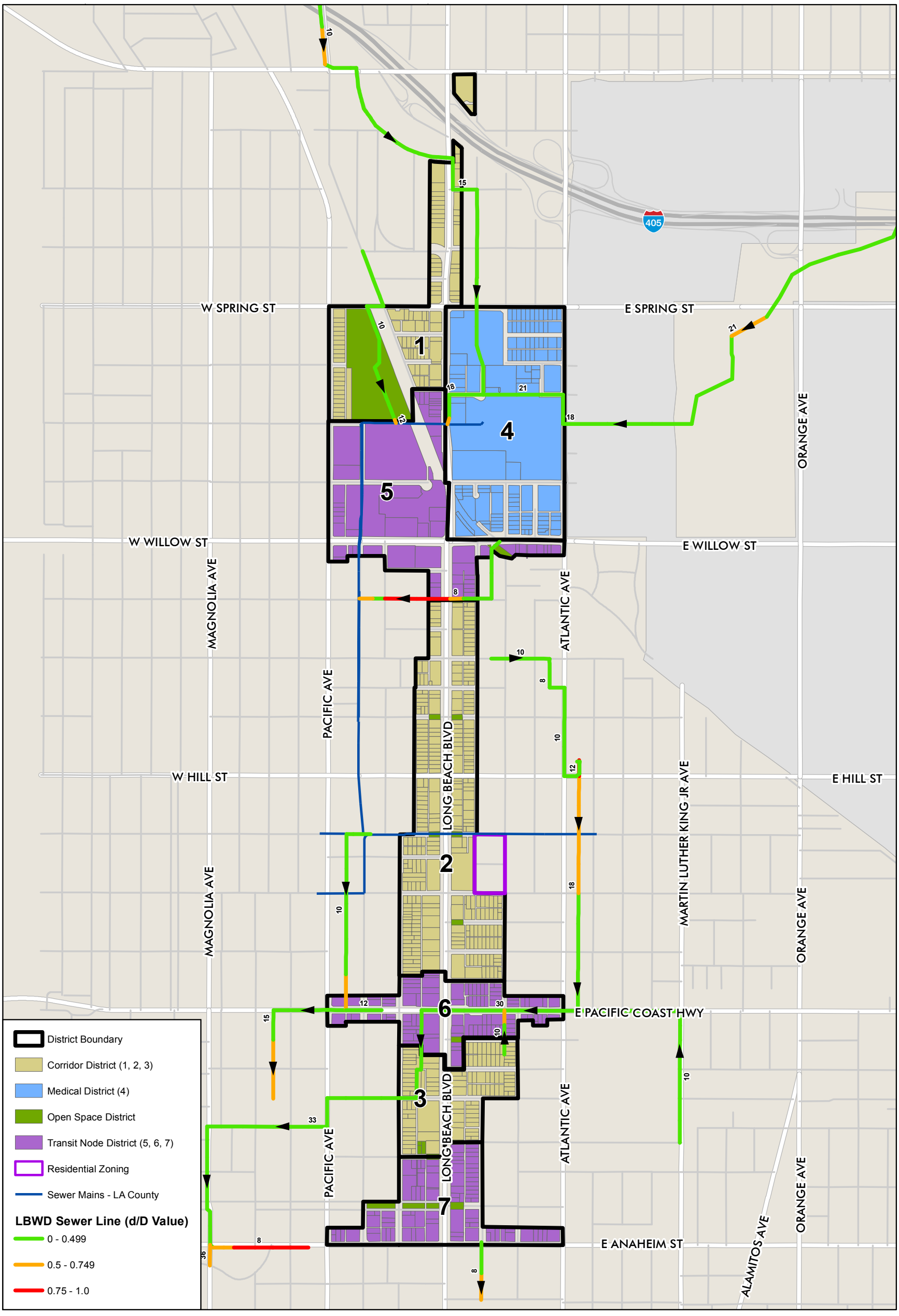
Furthermore, new residential and commercial development that would be accommodated by the Midtown Specific Plan would be required to pay a sewer capacity fee required under Part 18 (Sewer Capacity Charge) of the Rules, Regulations, and Charges approved by the Long Beach Board of Water Commissioners in 2011. Specifically, commercial (all added plumbing fixtures) and residential uses (new units only) are required to pay the fees set forth in Appendix B of the Rules, Regulations, and Charges, which are currently set at $97.31 for both of these land uses (Long Beach 2014).

Sanitation Districts Conveyance System

In addition to the City's updating of their sewer hydraulic model, an analysis of the increased flows from Transit District 5 of the Midtown Specific Plan area into the Sanitation Districts trunk lines (24 and 30 inches in parallel) was performed in the Infrastructure Technical Report (see Appendix E). The Sanitation Districts provided 2013 maximum flow rates for 24 segments of the main trunk lines that serve Transit District 5 among other areas of the City. Their analysis identified that for 23 of the 24 segments, all peak flows were significantly below the design capacity with the exception of one 24-inch segment (specific location not identified by the Sanitation Districts).

The trunk lines are designed to accommodate on average over 5 mgd and the maximum flow rates for 2013 averaged approximately 3.2 mgd or less. The addition of the Midtown Specific Plan's 0.47 mgd of proposed sewer increases from Development Districts 1, 4 and 5 (see Tables 5.14-2, *Estimated Project Wastewater Generation*) to the existing trunk sewer lines would not increase the flows beyond the total design capacity of these larger trunk sewer lines. Therefore, implementation of the Midtown Specific Plan would not require upsizing of the Sanitation Districts trunk sewer lines serving the Midtown Specific Plan area.

Figure 5.14-2 - Deficiencies in Existing Sewers Relative to Project Buildout Wastewater Flows
5. Environmental Analysis



Source: Fuscoe, 2015

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However, all development projects within the Midtown Specific Plan area would require "Will Serve" letters from the Sanitation Districts, in which project specific flows will be further evaluated by the Sanitation Districts. To ensure sufficient capacity within the trunk sewer lines, the Sanitation Districts would review individual developments projects that would be accommodated by the Midtown Specific Plan in order to determine whether or not sufficient trunk sewer capacity exists to serve each development project and if the Sanitation Districts facilities will be affected by the development project. This would be accomplished through the Sanitation Districts "Will Serve" letter process. Since the "Will Serve" letter process is not a standard City requirement for development projects, it has been added as mitigation at the end of this section.

Area Outside the Midtown Specific Plan

Under the Proposed Project, the area that is outside the Midtown Specific Plan, which covers two residential blocks around Officer Black Park (approximately 4 acres) west of Pasadena Avenue between 21st Street and 20th Street (see Figure 3-5, *Current and Proposed Zoning Designations*), would be extracted from PD 29 and retain its underlying conventional zoning designations, which include Single-Family Residential, standard lot (R-1-N); Three-Family Residential (R-3-S); and Park (P). With the exception of the zoning designation revisions that would be undertaken, no physical change (e.g., additional development intensity, redevelopment) is expected to occur within this area and all existing uses (which include residential uses, a church, and Officer Black Park) are expected to remain. Therefore, no impacts to wastewater treatment and conveyance and systems are anticipated to occur.

5.14.1.4 CUMULATIVE IMPACTS

Wastewater Treatment

The area considered for cumulative impacts is the service area of the JWPCP, which is owned and operated by the Sanitation Districts. The JWPCP serves approximately 3.5 million people from throughout Los Angeles County. Wastewater flows through the JWPCP are projected to increase from the existing 263 mgd to 295 mgd in 2035 in proportion to estimated population growth in Los Angeles County over the 2015-2035 period, as shown in Table 5.14-4. The JWPCP has a 400 mgd capacity. Therefore, there is adequate wastewater treatment capacity in the region to accommodate projected future growth, and cumulative impacts to wastewater treatment capacity would be less than significant.

Table 5.14-4 Projected Cumulative Wastewater Treatment Demand, Joint Water Pollution Control Plant

JWPCP wastewater flows, 2014	Los Angeles County population[1]				JWPCP Projected Wastewater Flows for 2035
	Estimate for January 2015, CDF	Projection for 2035, SCAG[2]	Increase for 2015-2035	Percent Increase, 2015-2035	
263 mgd	10,136,559	11,353,000	1,216,441	12%	295 mgd

Sources: LACSD 2015; CDF 2015; SCAG 2014; USCB 2015.
Notes: mgd = million gallons per day
[1] Net increase in employment was not added to population growth here in estimating increases in wastewater treatment demand. In 2012 there were about 4.175 million jobs in Los Angeles County while about 3.911 million workers lived in the county (Longitudinal Employment-Household Dynamics, US Census Bureau 2015). Thus, the net inflow of workers into the County, about 264,000, was approximately 6.3 percent of the number of jobs in the County. Therefore, to use the total net increase in employment – in addition to the net increase in population – would result in a large overestimate in wastewater treatment demand.
[2] The 2015-2035 period chosen here for analysis of cumulative impacts is the same period analyzed for cumulative impacts in the project traffic impact analysis.

Sewers

Impacts of buildout under the Proposed Project to sewers would be limited to sewers in and near the Project Site. Therefore, impacts of the Proposed Project would not combine with impacts of other cumulative development projects in the City of Long Beach, or other development projects in other areas of the Sanitation Districts service area but outside the City, to result in significant cumulative impacts.

5.14.1.5 EXISTING REGULATIONS

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- Los Angeles County Sanitation Districts District 3, Connection Fee Ordinance
- City of Long Beach Water Department, Rules, Regulations, and Charges, Part 18 (Sewer Capacity Charges)

5.14.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.14-1 Project development would result in an impact on the City's and Sanitation Districts wastewater conveyance systems.

5.14.1.7 MITIGATION MEASURES

USS-1 Prior to the issuance of grading permits for individual development projects that would occur within the Midtown Specific Plan area and in lieu of implementing the sewer line replacement and upsizing improvements outlined in the Infrastructure Technical Report for Hydrology, Sewer, Water, and Water Quality prepared by Fuscoe Engineering (dated July 1, 2015), the project applicant/developer shall submit a site-specific sewer flow monitoring study to provide a more detailed analysis of the true sewer flow depths over time to determine if the potential for surcharge conditions would occur due to project development. The sewer flow monitoring study may indicate that there is sufficient capacity for the sewer lines identified in the Infrastructure Technical Report, as well indicate that they are above the design criteria (>0.75 d/D); and thereby, conclude that the replacement and upsizing improvements are not necessary. The sewer flow monitoring study shall be submitted to the City of Long Beach Development Services Department for review and approval.

USS-2 Prior to the issuance of grading permits for individual development projects that would be accommodated by the Midtown Specific Plan, the project applicant/developer shall provide evidence to the City of Long Beach Development Services Department that that the development project has been reviewed by the County Sanitation Districts of Los Angeles County (Sanitation Districts) and that a "Will Serve" letter has been issued by the Sanitation Districts. The "Will Serve" letter process is necessary in order to determine whether or not

sufficient trunk sewer capacity exists to serve each development project and if the Sanitation Districts facilities will be affected by the development project.

5.14.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Compliance with regulatory requirements and implementation of mitigation measures identified above would reduce impacts to a less than significant level. Therefore, no significant unavoidable adverse impacts have been identified.

5.14.2 Water Supply and Distribution Systems

The information in this section is based on the Water Availability Assessment prepared for the Proposed Project, which was approved by the City of Long Beach Board of Water Commissioners on May 7, 2015, and is included as Appendix I to this DEIR; and on the Long Beach Water Department 2010 Urban Water Management Plan revised by the Board of Water Commissioners in September 2011 (LBWD 2011b).

5.14.2.1 ENVIRONMENTAL SETTING

Regulatory Background

State

Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983, California Water Code Sections 10610 et seq., requires preparation of a plan that:

- Plans for water supply and assesses reliability of each source of water, over a 20-year period, in 5-year increments.
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- Implements conservation and the efficient use of urban water supplies. Significant new requirements for quantified demand reductions have been added by the Water Conservation Act of 2009 (Senate Bill 7 of Special Extended Session 7 (SBX7-7)), which amends the act and adds new water conservation provisions to the Water Code.

20x2020 Water Conservation Plan

The 20x2020 Water Conservation Plan, issued by the California Department of Water Resources (DWR) in 2010 pursuant to the Water Conservation Act of 2009 (SBX7-7), established a statewide water conservation target of 20 percent reduction in water use by 2020 compared to the State's 2005 baseline use.

Senate Bills 610 and 221

To assist water suppliers, cities, and counties in integrating water and land use planning, the state passed Senate Bill (SB) 610 (Chapter 643, Statutes of 2001) and SB 221 (Chapter 642, Statutes of 2001), effective January 1, 2002. SB 610 and SB 221 improve the link between information of water-supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures that promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to city and county decision makers prior to approval of specified large development projects. This detailed information must be included in the administrative record as the evidentiary basis for an approval action by the city or county on such projects. The statutes recognize local control and decision making regarding the availability of water for projects and the approval of projects. Under SB 610, water supply assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects subject to CEQA, as defined in Water Code Section 10912[a]. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative verification of sufficient water supply. SB 221 is intended as a fail-safe to ensure collaboration on finding the needed water supplies to serve a new large subdivision before construction begins.

The Urban Water Management Planning Act states that every urban water supplier that provides water to 3,000 or more customers or provides over 3,000 acre-feet (af) of water annually should make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its various categories of customers during normal, dry, and multiple dry years. Both SB 610 and SB 221 identify the urban water management plan (UWMP) as a planning document that can be used by a water supplier to meet the standards in both statutes. Thorough and complete UWMPs are foundations for water suppliers to fulfill the specific requirements of these two statutes, and they are important source documents for cities and counties as they update their general plans. Conversely, general plans are source documents as water suppliers update the UWMPs. These planning documents are linked, and their accuracy and usefulness are interdependent (DWR 2008).

Governor Brown's Executive Order B-29-15

On April 1, 2015, Governor Brown issued Executive Order B-29-15, finding that, among other things, "…conditions of extreme peril to the safety of persons and property continue to exist in California due to water shortage and drought conditions…" and ordering that, among other things, the "State Water Resources Control Board shall impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016.

These restrictions will require water suppliers to California's cities and towns to reduce usage as compared to the amount used in 2013. These restrictions should consider the relative per capita water usage of each water suppliers' service area, and require that those areas with high per capita use achieve proportionally greater reductions than those with low use."

On April 18, 2015, the State Water Resources Control Board released a draft of the water-use-reduction target they intend to impose on each individual urban water supplier; the final order was issued on July 15, 2015. The water use reduction target for the City of Long Beach is 16-percent below water usage in 2013.

Local

City of Long Beach Municipal Code

The following provisions from the City's Municipal Code focus on water supply impacts and water conservation:

- **Chapter 18.47 (Green Building Standards Code).** Adopts by reference the most current (2013) California Green Building Standards Code (CALGreen).

- **Chapter 18.74 (Low Impact Development Standards).** Requires the use of low impact development (LID) standards in planning and construction of development projects. These standards help to control and maintain water flow rate using site design and best management practices.

- **Chapter 21.42 (Landscaping Standards), Section 21.42.035 (Special Requirements for Water Efficient Landscaping).** Outlines the types of projects that are required to adhere to the provisions of this section.

Existing Conditions

The City of Long Beach Water Department (LBWD) provides water to the City. The City obtains water from three sources: water imported from northern California and the Colorado River by the Metropolitan Water District of Southern California (MWD); groundwater from the Central Subbasin of the Coastal Plain of Los Angeles Groundwater Basin; and recycled water.

The following information on water supplies, Citywide water demands, and water supply reliability was obtained from two sources: 1) the Water Availability Assessment (WAA) prepared for the Proposed Project, as approved by LBWD and the City of Long Beach Board of Water Commissioners on May 7, 2015; and the Long Beach Water Department 2010 Urban Water Management Plan (UWMP) revised by the Board of Water Commissioners in September 2011. The WAA determined that the type of development that would be accommodated by the Proposed Project was included in the forecast water demand in the 2010 UWMP. Therefore, the WAA relied on LBWD water supplies and demands as described in the 2010 UWMP. The tables of water supplies and demands below are from the 2010 UWMP.

Imported Water

Water is imported from northern California via the State Water Project, and from Colorado River via the Colorado River Aqueduct. Purchases of imported water amounted to 22,237 acre-feet per year (afy) in 2010; are forecast to peak at 24,520 afy in 2015; and then gradually decline to 11,929 afy in 2035; one acre-foot is 325,851 gallons. Imported water was 35 percent of the City's water supply in 2010 and is estimated to decline to about 17 percent of supply in 2035. LBWD has preferential rights to approximately 2.5 percent of MWD water supplies.

Groundwater

Two large reservoirs of underground water known as the Central and West Basin cover over 420 square miles beneath southern Los Angeles County. Long Beach's groundwater pumping rights from the Central Subbasin were established based on a court adjudication ("Central Basin Judgment"). Based on the judgment, the City currently has rights to pump up to 32,692 afy from the Central Subbasin. The City pumped 34,655 af from the Central Subbasin in 2010; projected pumping amounts during the 2015-2035 period range from 33,000 afy in 2015 to 35,000 afy in 2035. Groundwater is forecast to comprise 48 to 49 percent of the City's water supplies over the 2015-2035 period.

Recycled Water

Recycled water used in the City is treated by a primary, secondary (biological), and tertiary (filtration) process at the Long Beach Water Reclamation Plant (LBWRP), owned and operated by the Sanitation Districts. The LBWRP treats up to 25 million gallons of wastewater per day. The recycled water is used for irrigation; injection into the Alamitos Seawater Barrier to prevent seawater intrusion into the Central Basin aquifer; and repressurization of offshore oil-bearing rock formations. Irrigation customers include parks, schools, golf courses, and cemeteries. Recycled water use amounted to 6,556 afy in 2010 and is estimated to increase to 14,000 afy in 2035.

Desalination

LBWD and the U.S. Bureau of Reclamation operated a prototype seawater desalination plant as a feasibility study; the plant was disassembled in 2010. Research on the feasibility and environmental benefits of an under-ocean seawater intake and discharge system, as an alternative to open ocean intake and discharge, was ongoing in 2010. The City will likely proceed with a production seawater desalination facility within the next 10-15 years; such facility would be estimated to produce 5,000 to 10,000 afy of potable water.

Water Supply Summary

Forecast City of Long Beach water supplies in normal water-year conditions through the 2015-2035 period are summarized in Table 5.14-5.

Table 5.14-5 Water Supplies in Acre-Feet per Year

Source	2010	2015	2020	2025	2030	2035
Imported Water	22,237	24,520	24,046	18,551	17,477	11,929
Groundwater: LBWD Central Basin Aquifer rights	34,655	33,000	33,500	34,000	34,500	35,000
Desalinated Water (Potable Supply)	—	—	—	5,000	5,000	10,000
Recycled Water	6,556	10,100	11,300	13,400	13,700	14,000
Total	63,448	67,620	68,846	70,951	70,677	70,929

Source: LBWD 2011b.
Notes: 2010 data are actual supplies; 2015 through 2035 data are forecasts.

Water Demands

City of Long Beach

Water demands for 2010 reported in Table 5.14-6 are actual water deliveries. Future water-use projections were developed using MWD's econometric model with input from LBWD and the Southern California Association of Governments; LBWD's expectations for additional water conservation; and the 20x2020 Water Conservation Plan urban water use target for LBWD. The interim (2015) target is 121 gpcd and the 2020 target is 107 gpcd. Actual 2010 deliveries were 110 gpcd, below the 2015 target. The 2010 water use baseline pursuant to the 20x2020 Water Conservation Plan is 134 gpcd. The baseline and water use targets pursuant to the 20x2020 Water Conservation Plan include all water uses – that is, for all land uses, and indoor and outdoor uses.

Table 5.14-6 Water Demands in Acre-Feet per Year

	2010	2015	2020	2025	2030	2035
Residential	37,786	38,548	38,565	38,569	38,184	38,152
Commercial	14,168	14,453	14,460	14,461	14,317	14,305
Industrial	229	234	234	234	232	231
Landscape	1,938	1,997	1,978	1,978	1,958	1,957
Other	8	8	8	8	8	8
Recycled Water	6,556	10,100	11,300	13,400	13,700	14,000
System Losses	2,570	2,301	2,302	2,302	2,279	2,277
Total	63,448	67,620	68,846	70,951	70,677	70,929

Source: LBWD 2011b.
Notes: 2010 data are actual use; 2015 through 2035 data are forecasts.

Project Site

Water demands within the Project Site in 2010 were estimated using 2010 water deliveries of 110 gpcd. The current population onsite is 6,133 persons (see Table 3-1, *Land Use Projections for Midtown Specific Plan Area*); therefore, current water demands onsite are estimated to be 674,630 gallons per day.

Water Supplies and Demands Comparison

Total water supplies and demands through the 2010-2035 period are compared in Table 5.14-7. As shown in the table, the City forecasts that it will have adequate water supplies to meet water demands through the 2010-2035 period.

Table 5.14-7 Water Supplies Compared with Water Demands

	2010	2015	2020	2025	2030	2035
Total Supplies	63,448	67,620	68,846	70,951	70,677	70,929
Total Demands	63,448	67,620	68,846	70,951	70,677	70,929
Surplus/(Deficit)	0	0	0	0	0	0

Source: LBWD 2011b.

Water Supply Reliability

Water Availability Assessment In Relation to LBWD's 2010 Urban Water Management Plan

If the projected water demand associated with the project had been accounted for in a water supplier's most recently adopted UWMP, the water supplier ***may*** rely on information from that plan in preparing certain elements of the assessment.

LBWD's most recently adopted UWMP (2010) did not articulate specific development projects; but factored in their expected demand by projecting increases in factors influencing this demand, such as increases in housing, population, and employment.

Approximately 85 percent of the Proposed Project's demand will be from multi-family units and hotel rooms, the balance from retail, restaurant and other. The 2010 UWMP projected water demands based on a number of factors, including an increase in multi-family housing from 90,954 units in 2010 to 108,773 units by 2035, or a total increase of 17,819 units. The Proposed Project, by adding an equivalent of 2,044 dwelling units, represents approximately 11 percent of the new water demand from multi-family housing accounted for in the 2010 UWMP.

The 2010 UWMP water demand forecast took growth in the commercial and retail sector into consideration, indirectly, by projecting an increase in water demand based on an increase in total employment, projecting an increase from 179,842 in 2010 to 196,185 jobs by 2034, an increase of 16,343 jobs. The Proposed Project's commercial and retail space represents about 9 percent of this projected increase in employment, or about 1,500 jobs (375,000 square feet x [California Department of Water Resources' equivalent of 1000 employees per 250,000 square feet]).

LBWD had used the UWMP to develop water availability assessments for projects since 2011. Although those projects were also not specifically identified in the 2010 UWMP, the assessments found that projected water supplies for twenty years would be available during normal, single-dry, and multiple-dry water years to meet the projected water demand associated with these past projects, in addition to the existing and other planned future uses of LBWD's system.

Those assessments were fundamentally based on three factors: the reliability of LBWD's groundwater, MWD statements of reliability, and Long Beach's preferential right to certain MWD water supplies.

The reliability of LBWD's groundwater and the Long Beach preferential rights to MWD supplies have not materially changed from the assumptions in the 2010 UWMP. Therefore, for the purpose of the WAA prepare by LBWD for the Proposed Project (see Appendix I), the 2010 UWMP as it pertains to groundwater and preferential rights is an appropriate reference, except as noted below.

What has materially changed from the 2010 UWMP is the reliability of MWD's imported water supplies and the severe drought conditions prevailing at the time the WAA was prepared and adopted. MWD supplies are demonstrably less reliable than MWD anticipated in 2010 and less reliable than LBWD assumed in its 2010 UWMP.

Imported Water

MWD provides, through its wholesale water programs, about 50-percent of the potable water consumed in Long Beach and throughout southern California. As such, MWD's reliability is essential for the reliability of the City and the region. These supplies are imported from the San Francisco/ Sacramento Bay Delta region through the State Water Project and from the Colorado River through the Colorado River Aqueduct.

On April 14, 2015, the Board of Directors of the MWD declared a 15 percent water shortage allocation, that is, an "Extreme Shortage" condition. In an Extreme Shortage condition, MWD must allocate available supply to full-service customers and cannot meet other demands including interruptible demands and Interim Agricultural Water Program deliveries.

Metropolitan Water District. It is the assessment of LBWD that MWD will likely not achieve the 100-percent reliability assumed in MWD's 2010 Regional UWMP for the following two reasons:

- MWD's Water Shortage Allocation Plan provides a disincentive to conserve water. MWD allocates water during shortages proportionally to past water use among its 26 member agencies. Therefore, a member agency that had reduced water consumption to 150 gallons per capita per day (gpcd) before a shortage would have its MWD allocation reduced to 120 gpcd in the event of a 20 percent reduction in allocation by MWD. Past water conservation by customers of that member agency would make achieving the further 20 percent reduction difficult. By contrast, a member agency that used 200 gpcd before a shortage would have its allocation reduced to 160 gpcd by a 20 percent reduction in allocation.

- Water conservation projections in MWD's 2010 Regional UWMP are overestimated compared to past water conservation in MWD's service area. For example, MWD assumes certain amounts of water are conserved for each weather-based irrigation controller installed. But these devices may be conserving just a fraction of that assumed by MWD. MWD did not predict in its 2005 Regional UWMP the shortage it suffered in 2007. And MWD did not predict in its 2010 Regional UWMP the shortage it is currently suffering. Given the permanent reduction of water from the Colorado River and from the State Water Project, and MWD's incentive for water agencies to not conserve prior to actual shortage allocations, it is likely that MWD will suffer additional shortages over the next 20 years.

State Water Project Reliability. California's Department of Water Resources (DWR) manages the State Water Project (SWP). DWR is updating its bi-annual reliability assessment of the SWP. Following is an excerpt from the 2013 draft report summary.

> The analyses in this report consider climate change and the effects of sea level rise on water quality, but do not incorporate the probability of catastrophic levee failure. The differences between the 2011 and 2013 Reports can be attributed primarily to updates in the assumptions and inputs to the computer simulation analyses.
>
> As noted in the discussion of SWP exports in Chapter 4 of this report, estimated average annual Delta exports (that is, SWP water of various types pumped by and transferred to contractors from the Banks Pumping Plant) have decreased since 2005, although the bulk of

the change occurred by 2009 as the federal BOs went into effect, restricting operations. These effects are also reflected in the SWP delivery estimates provided in Chapters 5 and 6 of this report. Chapters 5 and 6 characterize the SWP's water delivery reliability under existing conditions and future conditions, respectively. The most salient findings in this report are as follows:

- The estimated average annual SWP exports decrease from 2,612 thousand acre- feet (taf)/year to 2,466 taf/year (146 taf/year or about 5.6%) between the existing- and future-conditions scenarios.
- Under existing conditions, the average annual delivery of Table A water estimated for this 2013 Report is 2,553 taf/year, 29 taf (1%) more than the 2,524 taf/year estimated for the 2011 Report.
- Under future conditions, the average annual delivery of Table A water estimated for this 2013 Report is 2,400 taf/year, about 1% less than the 2,465-taf/year estimate for the future-conditions scenario presented in the 2011 Report.

With respect to SWP reliability 20-years into the future (2033), DWR expects additional downward pressure on water reliability caused by the impacts of climate change including the increased variability in floods and droughts, and sea level rise.

The weather in Long Beach has been extremely hot and dry for the first three months of 2015: rainfall, at 1.6 inches, was only 22 percent of normal for that time of year; and the average daily high temperature, at 74 degrees, was 10 percent warmer than normal for that time of year. The current water supply forecast is largely negative:

- As of April 1, 2015, the northern snow pack, which feeds the SWP, was only 5 percent of normal;
- As of April 7, 2015, 99.8 percent of California remained in an "Abnormally Dry" to "Exceptional Drought" condition; and parts of southern California, including Long Beach, were in the most severe drought condition: an "Exceptional Drought" condition;
- As of April 14, 2015, the key reservoir feeding the SWP, Lake Oroville, was at 51 percent of capacity, which was only 65 percent of normal for that time of year; and
- The National Oceanic and Atmospheric Administration's (NOAA) most recent 3-month forecast (March 19, 2015) predicts temperatures for most of California, especially along the coast, will be much higher than normal for that time of year and rainfall for most of California, including southern California, will be normal for that time of year; i.e., little to no rainfall is expected.

If these unusually warm and dry conditions persist through the winter of 2015-16, the water shortage throughout California could become catastrophic. Even above normal precipitation and below normal temperatures would probably not be enough to lift California out of a drought condition.

Colorado River Reliability. Severe negative impacts of climate change on the Colorado River identified by the U.S. Bureau of Reclamation include:

> In the Western United States, these changes are not just anticipated for the future, but are being measured today:
>
> - Average temperatures are rising, thereby increasing evaporation and perhaps increasing the severity of recent droughts;
> - A greater portion of winter precipitation is falling in the mountains as rain rather than snow, reducing the winter snowpack;
> - Winter low temperatures are rising, and the snowpack is melting earlier in the spring; and
> - Collectively, these trends for precipitation and temperature are producing earlier runoff, making it harder to use the winter precipitation later in the summer.
>
> Climate projections published by the Intergovernmental Panel on Climate Change (IPCC) indicate these changes will continue or even accelerate during the twenty-first century. Particularly in the Southwest, there is strong agreement in climate forecasts toward higher temperatures and less runoff into reservoirs. Increased temperatures will also mean increased water demands and increased rates of evaporation.

Governor Brown's Executive Order B-29-15. Executive Order B-29-15 is described above under the *Regulatory Background.*

Groundwater Reliability

Groundwater basins, including the Central Subbasin, are managed so that groundwater pumping does not exceed the total of natural and intentional recharge into a basin; such sustainable rate of groundwater pumping is the safe operating yield. Many groundwater basins, including the Central Subbasin, are managed pursuant to court rulings; the *Central Basin Judgment* is the court decision governing the Central Subbasin. The California Department of Water Resources implements the Central Basin Judgment in its role as Watermaster for the Central Subbasin. Adjudicated water rights from the Central Subbasin total 217,367 afy. Imported water and recycled water are recharged into the Central Subbasin by the Water Replenishment District of Southern California (WRD). In 2010 WRD recharged 25,295 acre feet of imported water into the Central Subbasin (CBMWD 2012).

Water Mains in Project Site

The City of Long Beach distributes water to the Project Site. Existing water mains within the Project Site, ranging from 2 to 30 inches diameter, are mapped in detail in the Infrastructure Technical Report included as Appendix E to this DEIR.

5.14.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.

5.14.2.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study (see Appendix A) disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-2: Water supply and distribution systems are adequate to meet the requirements of the Proposed Project. [Thresholds U-2 (part) and U-4]

Impact Analysis: The potential impacts to water supply and delivery systems resulting from the Proposed Project within each of the areas of the Project Site are addressed below.

Midtown Specific Plan Area

Water Demand and Supply

As shown in Table 5.14-8, buildout under the Midtown Specific Plan is estimated to increase water demands in the Project Site by approximately 475,500 gallons per day (that is, about 533 acre-feet per year), or 36 percent, compared to existing water demands onsite.

Table 5.14-8 Estimated Project Water Demand

Land Use	Net Increase and Units	Water Demand, acre-feet per year[1]	
		Per unit	Total
Multifamily Residential	1,736 units	0.25	434
Hotels/Motels	108 rooms	0.14	15
Commercial/Retail	375,000 square feet	0.224 per 1,000 square feet	84
Total Net Increase	—	—	533
Existing Water Demand	—	—	1,500
Total Water Demand Onsite at Project Buildout	—	—	2,033

Source: Long Beach Water Department 2015.
[1] One acre-foot per year is equivalent to about 892.2 gallons per day.

LBWD forecasts that it will have sufficient water supplies to meet estimated water demands from buildout of the Midtown Specific Plan. This finding is based on LBWD's rights to a reliable supply of groundwater and LBWD's preferential rights to MWD water.

Additionally, the landscape plans of individual development projects that would be accommodated by the Midtown Specific Plan would be required to designed and implemented in accordance with the water-efficient landscape requirements outlined in the Section 21.42.035 (Special Requirements for Water Efficient Landscaping) of the City's Municipal Code. Individual development projects would also be required to comply with the provisions of Chapter 18.74 (Low Impact Development Standards) of the City's Municipal Code, which requires the use of low impact development (LID) standards in planning and construction of development projects. These standards help to control and maintain water flow rate using site design and best management practices.

Furthermore, the Midtown Specific Plan outlines a number of provisions that would ensure that individual development projects within the Midtown Specific Plan area are designed with water conservation in mind, including:

- Projects are highly encouraged to use native and low-water-use plants consistent with the landscaping palettes recommended by the Long Beach Water Department.

- Irrigation systems should incorporate water conserving methods and water efficient technologies such as drip emitters, evapotranspiration controllers, and moisture sensors. Explore opportunities to reuse rain water and/or gray water for irrigation.

- Landscaping areas should use minimal water resources and impermeable surfaces. Lawn/turf shall be limited to areas that serve a functional purpose.

- Drainage should be directed to permeable areas to minimize discharge to the storm drain system. Use pervious or open grid paving for parking areas whenever possible to reduce the negative effects of stormwater runoff and to facilitate groundwater recharge

Future development that would be accommodated by the Midtown Specific Plan would also be required to comply with the provisions of the most current (2013) California Green Building Standards Code (CALGreen; adopted by reference in Chapter 18.47 [Green Building Standards Code] of the City's Municipal Code), which contains requirements for indoor water use reduction and site irrigation conservation.

Water Distribution System

For the analysis conducted in the Infrastructure Technical Report (see Appendix E), the City's water hydraulic model was updated using water flows estimated at project buildout. As concluded in the report, all water mains within the Midtown Specific Plan area have adequate capacity to convey water flows at buildout conditions except for one segment (a distance of about 1,000 feet) of an 8-inch water main in Districts 3 and 6, along Long Beach Boulevard between Pacific Coast Highway and 16th Street (see Figure 15 [Proposed Water Improvement Recommendation] of the Infrastructure Technical Report). That water main segment

may require replacement with a 10 or 12-inch main, depending on the configuration of land uses at buildout in Districts 3 and 6 of the Midtown Specific Plan area.

Replacement of the aforementioned water main in District 6, if required, would occur within existing roadways in soil already disturbed by construction of the roadways and existing utilities. Replacement of the water main is noted as a project improvement (or project design feature) in the Midtown Specific Plan, impacts of which are analyzed throughout Chapter 5 of this DEIR. For example, if implementation of upgrades is required, conformance with the General Construction Permit for Linear Projects would be followed, which serves to reduce the impacts of construction through the use of sediment and erosion based best management practices (see sediment and erosion impacts discussion in Section 5.7, *Hydrology and Water Quality*). Potential water main replacement would not cause significant impacts additional to those identified elsewhere in Chapter 5, and no additional significant impact would occur.

Under proposed conditions, it is also anticipated that the majority of existing onsite water lines within private parcels would be removed and replaced with new water lines based on the proposed building configuration and type of development proposed for each parcel. The new water lines would be implemented as needed to better serve the individual development projects that would be accommodated by the Midtown Specific Plan. Additionally, it is anticipated that routine maintenance and replacement of older water lines within the City's right-of-way will continue throughout the Midtown Specific Plan area consistent with the Capital Improvement Program established by the Long Beach Water Department; all activities associated with routine maintenance and replacement of older water lines would be initiated and undertaken by the City as needed. However, no major infrastructure improvements are anticipated and the increases in water demand due to buildout of the Midtown Specific Plan can be adequately served by the existing infrastructure (Fuscoe 2015).

Based on the preceding, no significant impacts to water distribution systems are anticipated to occur.

Area Outside the Midtown Specific Plan

As noted above, with the exception of the zoning designation revisions that would be undertaken in this area of the Project Site under the Proposed Project, no physical change (e.g., additional development intensity, redevelopment) is expected to occur within this area and all existing uses (which include residential uses, a church, and Officer Black Park) are expected to remain. No new parks or recreation facilities would occur within this area of the Project Site. Therefore, no impacts to water supply and delivery systems are anticipated to occur.

5.14.2.4 CUMULATIVE IMPACTS

Water Demand and Supply

Water supplies and demands for LBWD's service area are addressed above under the *Existing Conditions* discussion. Future water-use projections were developed using MWD's econometric model with input from LBWD and the Southern California Association of Governments; LBWD's expectations for additional water conservation; and the 20x2020 Water Conservation Plan urban water use target for LBWD. The 2010 UWMP found that forecast water supplies would meet demands in normal, single-dry-year, and multiple-dry-year

conditions. The WAA concluded that LBWD would have sufficient water supplies to meet water demands of the Proposed Project. Therefore, cumulative impacts on water supply would be less than significant, and the Proposed Project water supply impacts would not be cumulatively considerable.

Water Distribution System

Impacts to water mains due to buildout of the Proposed Project would be limited to mains in and near the Project Site. Therefore, project-related impacts would not combine with impacts of other cumulative development projects within the City under the Long Beach General Plan to result in significant cumulative impacts.

5.14.2.5 EXISTING REGULATIONS

State

- California Water Code Sections 10610 et seq.: Urban Water Management Planning Act
- SBX7-7 (2009): Water Conservation Act of 2009
- Senate Bill (SB) 610 (Chapter 643, Statutes of 2001) and SB 221 (Chapter 642, Statutes of 2001): Water Supply Assessments

Local

- City of Long Beach Municipal Code, Section 21.42.035 (Special Requirements for Water Efficient Landscaping), Chapter 18.47 (Green Building Standards Code), and Chapter 18.74 (Low Impact Development Standards)

5.14.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.14-2 would be less than significant.

5.14.2.7 MITIGATION MEASURES

No potentially significant impacts have been identified and no mitigation measures are required.

5.14.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant and no mitigation is required.

5.14.3 Storm Drainage Systems

Impacts to storm drainage systems are analyzed in Section 5.7, *Hydrology and Water Quality*, and are not analyzed further in this section.

5.14.4 Solid Waste

5.14.4.1 ENVIRONMENTAL SETTING

Regulatory Background

Federal

The Resource Conservation and Recovery Act of 1976 (RCRA) (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State

Assembly Bill 939 and 341

Assembly Bill 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

Assembly Bill 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts.

California Green Building Standards Code

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the 2013 California Green Building Standards Code (CAlGreen; Title 24, California Code of Regulations, Part 11) requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Local

Los Angeles Countywide Siting Element

In 1997, the County of Los Angeles prepared a Countywide Siting Element that estimates the amount of solid wastes generated in Los Angeles County and proposes various diversion and alternate disposal options. The Los Angeles Countywide Siting Element (Siting Element) is a long-term planning document that describes how the County and the cities within the County plan to manage the disposal of their solid waste for a 15-year planning period. The siting element identifies the Los Angeles County Department of Public Works (DPW) as the responsible agency to develop plans and strategies to manage and coordinate the solid

waste generated in the unincorporated areas and to address the disposal needs of Los Angeles County. In addition, the Siting Element contains goals and policies on a variety of solid waste management issues. The county will continue to meet its disposal capacity needs by implementing enhanced waste reduction and diversion programs and greater resource recovery efforts.

City of Long Beach

Chapter 18.67 (Construction and Demolition Recycling Program) of the City's Municipal Code requires that certain categories of projects divert at least 60 percent of construction and demolition waste from landfills, through reuse or recycling. Covered projects include all newly constructed buildings; building additions of 1,000 square feet or more; building alterations with a permit valuation of $200,000 or more; and all demolition projects.

Existing Conditions

Solid Waste Collection

The City of Long Beach Environmental Services Bureau collects trash and recyclable materials throughout Long Beach, including the Project Site. The City contracts with Waste Management, Inc. for the collection of recyclables. Currently, the City's Refuse Collection Division provides service to approximately 109,000 residential customers and 5,600 businesses.

Solid Waste Recycling and Disposal

Solid Waste Disposal

In 2013, approximately 331,000 tons of solid waste from Long Beach was disposed of in landfills. The 331,000 tons total includes approximately 74,000 tons that were used as alternative daily cover in landfills; that is, materials including compost and construction and demolition waste that are used to cover the active face of a landfill at the end of each operating day (CalRecycle 2014a). Approximately 96 percent of landfilled solid waste from Long Beach was disposed of at six landfills. Five of the landfills are described in Table 5.14-9; the sixth, Puente Hills Landfill, closed in October 2013 and is not included in the table below.

Table 5.14-9 Landfills Serving Long Beach

Landfill and Location[1]	Current Remaining Capacity (Cubic Yards)	Estimated Close Date	Maximum Daily Load (tons)	Average Daily Disposal, 2012 (tons)[2]	Residual Daily Disposal Capacity (tons)
El Sobrante Landfill City of Corona, Riverside County	145,530,000	2045	16,054	6,179	9,875
Frank R. Bowerman Sanitary Landfill City of Irvine, Orange County	205,000,000	2053	11,500	4,827	6,673
Olinda Alpha Sanitary Landfill City of Brea, Orange County	38,578,383	2021	8,000	5,210	2,790
Simi Valley Landfill & Recycling Center City of Simi Valley, Ventura County	119,600,000	2052	6,000	2,124	3,876
Sunshine Canyon City/County Landfill Community of Sylmar, City of Los Angeles	96,393,000	2037	12,100	7,221	4,879
Total	605,101,383	—	53,654	25,561	28,093

Sources: CalRecycle 2014a; CalRecycle 2014d; CalRecycle 2014e; CalRecycle 2014f; CalRecycle 2014g; CalRecycle 2014h.
[1] Puente Hills Landfill, one of the six landfills that accepted about 96 percent of landfilled waste from Long Beach in 2013, closed in October 2013 and is not included in this table.
[2] Average daily disposal is calculated from annual disposal based on 300 operating days per year; each of the five landfills is open six days per week, Monday through Saturday, except for certain holidays.

Recycling and Transformation

Nearly 203,000 tons of solid waste from Long Beach in 2013 was processed at the Southeast Resource Recovery Facility (SERRF), a recycling and waste-to-energy facility on Terminal Island in the City of Long Beach. The SERRF retrieves recyclable materials from the waste stream and also incinerates solid waste to generate electricity; its maximum permitted throughput is 2,240 tons per day (LACSD 2014; CalRecycle 2014b). A total of 595 tons of solid waste from Long Beach in 2013 was processed at the Commerce Refuse to Energy Facility, which incinerates solid waste to generate electricity and retrieves metals for recycling (CalRecycle 2014a).

In addition, Waste Management, Inc. takes additional recyclables to Potential Industries, a materials recovery facility in the City of Wilmington, where they are sorted and prepared for the market place.

There are 43 solid waste diversion programs in the City of Long Beach, including composting, household hazardous waste, public education, recycling, and source reduction programs; programs for specific categories of waste such as tires and concrete/asphalt/rubble; and incineration at the SERRF (CalRecycle 2014c).

5.14.4.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

U-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold U-7

This impact will not be addressed in the following analysis.

5.14.4.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-3: Existing solid waste facilities could accommodate the solid waste that would be generated by the Proposed Project. [Thresholds U-6]

Impact Analysis: The potential impacts to solid waste facilities resulting from the Proposed Project within each of the areas of the Project Site are addressed below.

Midtown Specific Plan Area

Using CalRecycle solid waste generation rates, buildout under the Midtown Specific Plan is forecast to generate a net increase of 38,314 pounds – or 19.2 tons – of solid waste per day, as shown in Table 5.14-10.

Table 5.14-10 Estimated Net Increase in Solid Waste Generation by Proposed Project Buildout

Land Use		Net Change	Solid Waste Generation in Pounds per Day	
			Per Unit	Total
Commercial/Employment	Retail	14,432 square feet	0.006 per square feet	87
	Service	-14,432 square feet	0.018 per square foot	-260
	Medical Office	330,103 square feet	0.084 per square foot	27,729
	General Office	157,740 square feet	0.006 per square foot	946
	Subtotal	487,843 square feet	Not applicable	28,502
Hotel		81 rooms	2 per room	162
Hospital		27 beds	16 per bed	432
Residential		1,736 units	5.31 per multifamily unit	9,218
			Total	38,314

Source: CalRecycle 2013a, 2013b, 2013c, and 2013d.
[1] Commercial/employment uses include professional office, medical office, and the conversion of industrial uses to other non-industrial uses, based on approximate professional office, medical office, and retail demand estimates for the Midtown Specific Plan. The 0.084 pounds per square feet rate used is the factor for professional office use.
[2] Factor for general commercial uses.

The five landfills described in Table 5.14-9, *Landfills Serving Long Beach*, have combined residual disposal capacity of over 28,000 tons per day. Therefore, there is adequate landfill capacity in the region for the estimated project-generated 19.2 tons of solid waste, and buildout under the Midtown Specific Plan would not require new or expanded landfill facilities. In addition, portions of the 19.2 tons of solid waste per day

would be processed at the Southeast Resource Recovery Facility and recycled or incinerated to generate electricity, or be sorted at Potential Industries for re-selling of recyclable materials.

Additionally, individual development projects that would be accommodated by the Midtown Specific Plan would be required to adhere to the provisions of Chapter 18.67 (Construction and Demolition Recycling Program) of the City's Municipal Code, which requires that certain categories of projects divert at least 60 percent of construction and demolition waste from landfills, through reuse or recycling. Covered projects include all newly constructed buildings; building additions of 1,000 square feet or more; building alterations with a permit valuation of $200,000 or more; and all demolition projects.

Furthermore, Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the 2013 California Green Building Standards Code (CALGreen; incorporated by reference in Chapter 15.22 [Green Building Standards Code] of the City's Municipal Code) requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Development that would be accommodate by the Midtown Specific Plan would be required to adhere to the waste reduction and recycling provisions of CALGreen, which would be ensured through the City's development review and building plancheck process.

Based on the preceding, impacts on solid waste disposal capacity are not anticipated to be significant.

Area Outside the Midtown Specific Plan

As noted above, with the exception of the zoning designation revisions that would be undertaken in this area of the Project Site under the Proposed Project, no physical change (e.g., additional development intensity, redevelopment) is expected to occur within this area and all existing uses (which include residential uses, a church, and Officer Black Park) are expected to remain. No new parks or recreation facilities would occur within this area of the Project Site. Therefore, no impacts to solid waste facilities are anticipated to occur.

5.14.4.4 CUMULATIVE IMPACTS

The area considered for cumulative impacts to landfill capacity is the City of Long Beach. The estimated citywide increase in solid waste disposal between 2015 and 2035 is shown in Table 5.14-11 and based on the California Department of Finance 2015 households estimate; US Census Bureau 2011 employment estimate; SCAG projections for 2035 based on City general plan development projections; and solid waste generation rates from the California Department of Resource Recovery and Recycling.

Table 5.14-11 Estimated Net Increase in Solid Waste Generation, City of Long Beach,

	2015	2035	Net Increase, 2015-2035	Solid Waste Generation in Pounds per Day	
				Per unit	Total
Households	163,986	188,900	24,914	7.7 pound/unit/day[2]	191,838
Employment	154,541 (2011)[1]	184,800	30,259	6.1 pound/employee/day[3]	183,309
				Total	375,147

Sources: CDF 2015; USCB 2014; SCAG 2012; CalRecycle 2013a.

[1] No employment estimate for the City of Long Beach for 2015 was available

[2] Housing units in Long Beach in 2015 consist of about 48 percent single-family units, 51 percent multi-family units, with the remainder being mobile homes. The waste generation factor used here is the average of the rates for single-family and multi-family units (10 pounds/unit/day and 5.3 pounds/unit/day, respectively).

[3] The generation factor is for general commercial use; and is the median of 3 generation rates for general commercial use listed on the California Department of Resource Recycling and Recovery's website (0.013 pound per square foot per day) converted to pound/employee/day using the estimate of one employee per 466 square feet in low-rise office use in the Southern California Association of Governments 6-county region (Natelson 2001).

As shown in the table, the estimated net increase in solid waste disposal from the City of Long Beach is approximately 375,147 pounds per day, or about 188 tons per day. As shown in Table 5.14-9, *Landfills Serving Long Beach*, the five landfills accepting the vast majority of the solid waste from the City have combined residual daily disposal capacity of about 28,000 tons. Therefore, the estimated net increase in solid waste generation would not require the construction of new or expanded landfills. Cumulative impacts would be less than significant, and impacts of the Proposed Project on solid waste disposal capacity would not be cumulatively considerable.

5.14.4.5 EXISTING REGULATIONS

State

- California Public Resources Code 40050 et seq.: Integrated Solid Waste Management Act of 1989
- Assembly Bill 341 (Chapter 476, Statutes of 2011)
- Title 24, California Code of Regulations, Part 11 (California Green Building Standards Code), Section 5.408 (Construction Waste Reduction, Disposal, and Recycling)

Local

- City of Long Beach Municipal Code, Chapter 18.67 (Construction and Demolition Recycling Program) and Chapter 15.22 (Green Building Standards Code)

5.14.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.14-3 would be less than significant.

5.14.4.7 MITIGATION MEASURES

No potentially significant impacts have been identified and no mitigation measures are required.

5.14.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant and no mitigation is required.

5.14.5 Other Utilities

5.14.5.1 REGULATORY BACKGROUND

Regulatory Background

California Building and Energy Efficiency Standards (CCR Title 24)

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and updated triennially (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect on January 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as CALGreen; adopted by reference in Chapter 18.47 [Green Building Standards Code] of the City's Municipal Code) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011.

Appliance Efficiency Regulations (CCR Title 20)

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally and non–federally regulated appliances.

5.14.5.2 ENVIRONMENTAL SETTING

Existing Conditions

Electricity

Southern California Edison (SCE) provides electricity to Long Beach, including the Project Site; SCE's service area spans much of southern California from Orange and Riverside counties on the south to Santa

Barbara County on the west to Mono County on the north. Total electricity consumption in SCE's service area was 100,365 gigawatt-hour (GWH) per year in 2012 and is forecast to increase to 113,802 GWH in 2024; one gigawatt-hour is one million kilowatt hours (CEC 2013).

Existing electricity demands from existing development within the Project Site are estimated to be approximately 66.7 million kilowatt-hours annually, as shown in Table 5.14-12.

Table 5.14-12 Existing Estimated Electricity Demands

Land Use	Electricity Demands in Kilowatt-hour per Year
Commercial- retail and service	25,537,951
Commercial- office and medical office	12,201,680
Industrial and warehouse	1,307,145
Schools and colleges	1,240,202
Residential	9,280,130
Hospital	16,976,600
Place of Worship	142,279
Total	**66,685,987**

Notes: Electricity demand factors used in estimating the demands shown above are from the California Emissions Estimator Model Version 2013.2.2 by California Air Pollution Control Officer's Association (CAPCOA) 2013.

Natural Gas

The City of Long Beach Gas and Oil Department provides natural gas to the City. Total natural gas consumption in the City was 26.3 million cubic feet per day (MMCF/day) in 2014 and is forecast to increase to 27.9 MMCf/day in 2035 (CGEU 2014). Estimated existing natural gas demand from existing development within the Project Site is approximately 119 million kBTU annually, as shown in Table 5.14-13.

Table 5.14-13 Existing Estimated Natural Gas Demands Onsite

Land Use	Natural Gas Demands in kBTU per Year
Commercial- retail and service	24,227,670
Commercial- office and medical office	9,959,900
Industrial and warehouse	373,827
Schools and colleges	2,475,995
Residential	32,970,830
Hospital	48,870,200
Place of Worship	224,651
Total	**119,103,073**

Notes: Natural demand factors used in estimating the demands shown above are from the California Emissions Estimator Model Version 2013.2.2 by California Air Pollution Control Officer's Association (CAPCOA) 2013.

5.14.5.3 THRESHOLDS OF SIGNIFICANCE

Although not specifically in Appendix G of the CEQA Guidelines, the following additional threshold is also addressed in the impact analysis. A project would normally have a significant effect on the environment if the project:

U-8 Would increase demand for other public services or utilities.

5.14.5.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study, included as Appendix A, disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-4: Existing and/or proposed electricity and natural gas facilities would be able to accommodate utility demands that would be generated by the Proposed Project. [Threshold U-8]

Impact Analysis: The potential impacts to solid waste facilities resulting from the Proposed Project within each of the areas of the Project Site are addressed below.

Midtown Specific Plan Area

Electricity

Buildout under the Midtown Specific Plan would create a net increase in electricity demand of approximately 16.5 million kWhr annually compared to existing conditions, as shown in Table 5.14-14. However, the net increase is well within SCE's systemwide net increase in electricity supplies of approximately 13,400 GWH annually over the 2012-2024 period. Therefore, there are sufficient planned electricity supplies in the region for the estimated net increase in electricity demands, and buildout under the Midtown Specific Plan would not require expanded electricity supplies.

Table 5.14-14 Estimated Electricity Demands from Buildout under the Midtown Specific Plan

Land Use	Electricity Demands in Kilowatt-hour per Year		
	Anticipated Land Uses, 2035, without Project	Net Increase: Proposed Project	Total [2035] with Project
Commercial- retail and service	22,003,969	6,740,686	28,744,655
Commercial- office and medical office	12,201,680	6,328,390	18,530,070
Industrial and warehouse	569,893	0	569,893
Schools and colleges	1,240,202	248,143	1,488,345
Residential	8,114,846	8,193,170	16,308,016
Hospital	16,976,600	405,448	17,382,048
Place of Worship	142,279	0	142,279
Total	61,249,469	21,915,837	83,165,306
Existing Demand, 2015	—	—	66,685,987
Net Increase, Total [2035] With-Project less Existing Demand	—	—	16,479,319

Notes: Electricity demand factors used in estimating the demands shown above are from the California Emissions Estimator Model Version 2013.2.2 by California Air Pollution Control Officer's Association (CAPCOA) 2013.

Additionally, plans submitted for building permits of development projects that would be accommodated by the Midtown Specific Plan would be required to include verification demonstrating compliance with the 2013 Building and Energy Efficiency Standards and are also required to be reviewed and approved by the City of Long Beach Public Utilities Department prior to issuance of building permits.

Development projects that would be accommodated by the Midtown Specific Plan would also be required adhere to the provisions of CALGreen, which established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

Furthermore, the Midtown Specific Plan outlines a number of provisions that would ensure that individual development projects within the Midtown Specific Plan area are designed with energy conservation in mind, including:

- Projects and buildings are encouraged to be more energy efficient than required by local and state codes.
- Energy efficient building materials should be used whenever possible and appropriate.
- EPA "Energy Star" labeled windows with low-e coatings are encouraged.
- Energy-efficient and natural lighting should be used wherever possible. Maximize daylighting and views through window placement and design. Passive solar design can be used to reduce heating requirements by 30 percent to 50 percent, thus saving money and energy.
- Materials that reduce the transfer of heat into and/or out of the building should be used. For example, the use of light-colored roofing materials to reflect heat and reduce cooling in buildings is encouraged.

- South- and west-facing windows should be shaded with an overhang, deciduous trees, or awnings to reduce summer exposure.

- Parking structures should integrate sustainable design features such as photovoltaic panels (especially on top parking deck), renewable materials with proven longevity, and stormwater treatment wherever possible.

Natural Gas

Buildout under the Midtown Specific Plan would generate a net increase in natural gas demands of approximately 33.5 million kBTU annually, as shown in Table 5.14-15. The City of Long Beach Gas and Oil Department forecasts that its natural gas supplies will increase by approximately 601 million kBTU annually between 2014 and 2035 (CGEU 2014). The forecast net increase in natural gas demands due to buildout under the Midtown Specific Plan is well within City forecasts of natural gas supplies, and therefore, would not require the City to obtain new or expanded natural gas supplies.

Table 5.14-15 Estimated Natural Gas Demands Onsite from Project Buildout

Land Use	Natural Gas Demands, kBTU per year		
	Anticipated Land Uses, 2035, without Project	Net Increase: Proposed Project	Total [2035] With Project
Commercial- retail and service	17,769,920	18,054,669	35,824,589
Commercial- office and medical office	9,959,900	3,999,540	13,959,440
Industrial and warehouse	129,691	0	129,691
Schools and colleges	2,475,995	339,474	2,815,469
Residential	27,906,851	21,838,000	49,744,851
Hospital	48,870,200	990,139	49,860,339
Place of Worship	224,651	0	224,651
Total	107,337,208	45,221,822	152,559,030
Existing Demand, 2015	—	—	119,103,073
Net Increase, Total [2035] With-Project less Existing Demand	—	—	33,455,957

Notes: Natural gas demand factors used in estimating the demands shown above are from the California Emissions Estimator Model Version 2013.2.2 by California Air Pollution Control Officer's Association (CAPCOA) 2013.

5.14.5.5 CUMULATIVE IMPACTS

The areas considered for cumulative impacts are SCE's service area for electricity, and the City of Long Beach for natural gas. Other cumulative development projects in accordance with the Long Beach General Plan would result in net increases in residential units and nonresidential square feet in each service area. However, Long Beach is a nearly built-out urbanized city; and much of the land in SCE's service area that is designated in City or Los Angeles County general plans for development is already developed. Therefore, many or most of the other cumulative development projects in the respective service areas would be redevelopment projects. Redevelopment projects would be required to achieve far more rigorous energy efficiency standards than the pre-existing developments on the affected sites. Therefore, while total numbers of residential units

and nonresidential square feet in each service area would increase, energy efficiency per residential unit or square foot is expected to increase. SCE and the City of Long Beach Gas and Oil Department each forecast that they will have adequate electricity and gas supplies, respectively, to meet demands within their service areas. Cumulative development projects would not combine with the development that would occur under the Proposed Project to result in significant cumulative impacts, and impacts on electricity and gas supplies would not be cumulatively considerable.

5.14.5.6 EXISTING REGULATIONS

- California Green Building Standards Code (Part 11, Title 24)
- California Code of Regulations, Title 20: Appliance Efficiency Regulations
- California Code of Regulations, Title 24: Building Energy Efficiency Standards

5.14.5.7 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.14-4 would be less than significant.

5.14.5.8 MITIGATION MEASURES

No potentially significant impacts have been identified and no mitigation measures are required.

5.14.5.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant and no mitigation is required.

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