

## IV.F UTILITIES

### 1. WASTEWATER AND SERVICE SYSTEMS

The purpose of this section is to assess the potential impacts to the local sewer system and regional wastewater treatment facilities serving the project site. This analysis of potential wastewater and service system impacts is based, in part, on the Wastewater/Sewer System Technical Report prepared for the proposed project by PSOMAS in ~~June~~ September 2010. This study is included in its entirety as Appendix J of this EIR.

#### EXISTING CONDITIONS

The Sanitation Districts of Los Angeles County (LACSD) and the City of Pasadena Department of Public Works (DPW) Engineering Division provide sewage conveyance infrastructure and treatment services to the project site.

#### REGIONAL TREATMENT FACILITIES AND INFRASTRUCTURE

Wastewater generated at the project site is treated at the San Jose Water Reclamation Plant (WRP) or the Whittier Narrows WRP. The San Jose Creek Water WRP has been designed to treat 100 mgd and currently treats an average of 756.8 mgd. The remaining capacity of the San Jose WRP is approximately 243.2 mgd or approximately 243 percent of its total capacity. The Whittier Narrows WRP has been designed to treat 15 mgd and currently treats an average of 54.47 mgd. The remaining capacity of the Whittier Narrows WRP is approximately 10.39.9 mgd or approximately 696 percent of its total remaining capacity.<sup>1</sup>

Wastewater generated at the project site would be conveyed by the City of Pasadena-maintained sewer conveyance infrastructure to LACSD-maintained trunk sewers. The LACSD-maintained trunk sewers that serve the project site are the Chapel Avenue Trunk Sewer, Section 2, located in Los Robles Avenue south of Old Mill Road or Allen Avenue Trunk Sewer, Sections 1, 2, and 4, located in San Marino Avenue at Stratford Road. The 15-inch diameter Chapel Avenue Trunk Sewer has a design capacity of 8.1 million gallons per day (mgd), and conveyed a peak flow of 0.52 mgd when last measured in 20106. Thus, the remaining capacity of the Chapel Avenue Trunk Sewer is approximately 7.96 mgd. The 15-inch diameter Allen Avenue Trunk Sewer has a design capacity of 6.0 mgd, and conveyed a peak flow of 1.38 mgd when last measured in 20106. Thus, the remaining capacity of the Allen Avenue Trunk sewer is approximately 4.72 mgd.

#### LOCAL INFRASTRUCTURE

The City of Pasadena-maintained sewage conveyance infrastructure serving the project site includes the Lake Avenue, Colorado Avenue, and Mentor Avenue sewer systems. Wastewater generated at the project site is drained directly into the Lake Avenue, Colorado Avenue, and Mentor Avenue sewer systems. Two 6-inch sewer laterals exist along the Mentor Avenue project frontage and connect to an existing 8-inch mainline sewer in Mentor Avenue. Eight 6-inch sewer laterals exist along the Colorado Boulevard project frontage and connect to an existing 12-inch mainline sewer in Colorado Boulevard. Two 6-inch sewer laterals exist along

<sup>1</sup> Written Correspondence from Adriana Raza, Customer Service Specialist, Sanitation Districts of Los Angeles County Facilities Planning Department, March 4, 2010.

the Lake Avenue project frontage and connect to an existing 10-inch mainline sewer in Lake Avenue. Wastewater collected by the Lake Avenue, Colorado Avenue, and Mentor Avenue sewer system would be conveyed to the LACSD-maintained trunk sewers discussed above.

### LOCAL REGULATORY SETTING

The City of Pasadena Sewer Master Plan (SMP), published in January 2007, is a plan for future study regarding potential capital and operational program requirements of the local wastewater utility system. The City's SMP reviewed the City's existing sewer usage and identified sewer pipelines with insufficient capacity. The SMP recommended capital improvements to pipelines that were identified to have insufficient capacity, to ensure areas of the City's wastewater utility system had the ability to serve future growth and replace aging infrastructure requirements. Figure 6-1 of the SMP identified sewer pipelines that have insufficient capacities.<sup>2</sup> No segments within any of the three sewer systems serving the project site (i.e. the Lake Avenue, Colorado Avenue, and Mentor Avenue sewer systems) were identified in the SMP to have insufficient capacity. The existing capacities of these three sewer systems, which establish a baseline condition for the proposed project, are shown in Exhibit 3 of the Wastewater/Sewer System Technical Report within Appendix J of this EIR. This data shows that the Mentor Avenue sewer has the greatest average available capacity at 47 percent; the Colorado Boulevard sewer has the next greatest average available capacity at 46 percent, and the Lake Avenue sewer has the relatively least average available capacity at 44 percent.

According to the SMP, a sewage operating capacity of 50 percent is defined as a normal dry weather design capacity, a sewage operating capacity of 75 percent is defined as a safe loading capacity, a sewage operating capacity between 75 percent and 85 percent is defined as a capacity needed for ventilation and for emergency, and a sewage operating capacity above 85 percent is defined as an area of hydraulic instability that is unacceptable. As such, the three sewer systems are currently operating slightly below the SMP's normal dry weather design capacity.

### EXISTING SITE SEWAGE GENERATION

The project site is currently developed with the former Constance Hotel, various retail and restaurant uses, a bank with drive-up tellers, and a parking garage. **Table IV.F.1-1** sets forth the sewage generated from the existing uses on the project site. Wastewater generated by the existing hotel structure drains into the eight-inch sewer line, beneath Mentor Avenue, that is a part of the Mentor Avenue sewer system. Wastewater generated by the existing retail and restaurant buildings on Colorado Boulevard, drains into a 12-inch sewer line, beneath Colorado Boulevard, that is a part of the Colorado Avenue sewer system. Wastewater generated by the existing Bank of America building is drained into an 8-inch sewer line, beneath Lake Avenue, that is a part of the Lake Avenue sewer system.

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<sup>2</sup> City of Pasadena, *City of Pasadena Master Sewer Plan*, January 2007.

<b>TABLE IV.F.1-1 Existing Estimated Sewage Generation From Project Site</b>			
<b>Use</b>	<b>Quantity</b>	<b>Gallon Rate<sup>1</sup> (GPD)</b>	<b>Wastewater (Gallons/day)</b>
Hotel <sup>2</sup>	136 rooms	150/room <sup>3</sup>	20,400
Bank/Office	24,885 sq. ft.	200/1,000 sq. ft.	4,977
Retail	5,371 sq. ft.	100/1,000 sq. ft.	537
Restaurant (5,640 sq. ft.) <sup>4</sup>	184 seats	50/seat	9,200
Parking Structure	7,500 sq. ft.	25/1,000 sq. ft.	188
<b>TOTAL</b>			<b>35,302</b>
<sup>1</sup> Determined per Los Angeles County Design Guideline Estimated Average Daily Sewage Flows for Various Occupancy, per Table 4. <sup>2</sup> Although the existing hotel has been unoccupied for over one year, the sewer manhole monitoring data, which was used as the basis for the January 2007 City of Pasadena Sewer Master Plan study, recorded sewage usage in 2005. Since this usage would have included the existing hotel (most recently was used as a nursing home), calculations assume the hotel is occupied in the existing baseline condition. <sup>3</sup> Sewage generation rate for a nursing home is not listed by the County of Los Angeles sewer section and is assumed to be equal to that of a hotel. <sup>4</sup> Assumes 65 percent of area used for seating and 1 seat per 20 square feet for restaurant quantity estimate. <b>SOURCE:</b> Colorado at Lake EIR Wastewater/Sewer System Technical Report, PSOMAS, June 2010.			

## ENVIRONMENTAL IMPACTS

### THRESHOLD OF SIGNIFICANCE

The proposed project would result in significant impacts to wastewater and sewer services if it:

- Exceeds the wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Requires or results in the construction of a new wastewater treatment facility or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Requires or results in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Results in a determination by the wastewater treatment provider which 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.

### PROJECT IMPACTS

Construction of the project would occur in three phases that include: (1) the renovation of the existing hotel building, (2) demolition of the existing retail/restaurant and bank buildings, and construction of the hotel addition, new retail, restaurant and condominium uses, and (3) the construction of additional retail, restaurant, replacement bank and office building space. The existing sewer laterals along the Mentor Avenue, Colorado Boulevard and Lake Avenue project frontages would be utilized for new building sewers to the maximum extent possible. However,

since sewer loads and points of connection cannot be finalized until the mechanical engineer has designed the plumbing system within the building, one new 6-inch sewer lateral may be required to connect to the Mentor Avenue sewer and one new 6-inch sewer lateral may be required to connect to the Lake Avenue sewer.

As shown in **Table IV.F.1-1**, the existing uses on the project site are estimated to generate approximately 35,302 gallons of sewage per day. **Table IV.F.1-2** provides the estimated net daily sewer generation that would occur with the proposed project. Project wastewater discharge is calculated by first calculating the total amount of discharge that would be generated from all components of the proposed project development then subtracting the existing discharge of 35,302 gallons per day (gpd) to arrive at the project's net increase in sewage generation. As **Table IV.F.1-2** shows, the proposed project is estimated to generate an average daily wastewater flow of 115,108 gpd and would, result in a net sewage generation increase of 79,806 gpd over the existing on-site wastewater generation before the implementation of water conservation measures. With the implementation of City of Pasadena mandated water conservation goals, proposed project's sewage generation would be reduced by 20 percent to 56,784 gpd. The 56,784 gallons per day represent 0.234 and 0.527 percent of the remaining daily treatment capacities of the San Jose and Whittier Narrows WRPs.

<b>TABLE IV.F.1-2</b> <b>Estimated Project Sewage Generation</b> <b>(Gallons/Day)</b>			
<b>USE</b>	<b>Quantity</b>	<b>Gallon Rate<sup>1</sup></b> <b>(GPD)</b>	<b>Wastewater</b> <b>(Gallons/day)</b>
<b>RESIDENTIAL</b>			
Condominium	5 dwelling units	250/dwelling unit	1,250
<b>TOTAL RESIDENTIAL</b>			<b>1,250</b>
<b>COMMERCIAL</b>			
Hotel Rooms	156 rooms	150/room	23,400
Retail	22,410 sq. ft.	100/1,000 sq. ft.	2,241
Restaurant (37,871 sq. ft.)	1,231 seats	50/seat	61,550
Office	103,410 sq. ft.	200/1,000 sq. ft.	20,682
Parking Structure	239,385 sq. ft.	25/1,000 sq. ft.	5,985
<b>TOTAL COMMERCIAL</b>			<b>113,858</b>
<b>TOTAL PROJECT</b>			<b>115,108</b>
<i>LESS EXISTING USES</i>			<i>35,302</i>
<b>NET INCREASE BEFORE WATER CONSERVATION DESIGN SCENARIO</b>			<b>79,806</b>
<i>LESS ADDITIONAL WATER CONSERVATION<sup>3</sup></i>			<i>23,022</i>
<b>NET INCREASE WITH WATER CONSERVATION DESIGN SCENARIO</b>			<b>56,784</b>
<sup>1</sup> Determined per Los Angeles County Design Guideline Estimated Average Daily Sewage Flows for Various Occupancy, per Table 4. <sup>2</sup> Assumes 65 percent of area used for seating and 1 seat per 20 sq. ft. for restaurant quantity estimate. <sup>3</sup> Assume 20 percent water conservation due to use of water efficient plumbing fixtures. <b>SOURCE:</b> Colorado at Lake EIR Wastewater/Sewer System Technical Report, PSOMAS, June 2010.			

**Table IV.F.1-3** shows the estimated change in sewage generation broken down by Average Daily Flow, Peak Dry Daily Flow, and Peak Daily Flow. As **Table IV.F.1-3** shows, the net

change of wastewater generated during the average daily flow, peak dry daily flow, and peak wet daily flow scenarios is 0.08, 0.16, and 0.21 mgd, respectively.

<b>TABLE IV.F.1-3 Estimated Project Sewage Generation (Average/Peak Daily Flow)</b>			
<b>Development</b>	<b>Average Daily Flow (MGD)<sup>1</sup></b>	<b>Peak Daily Flow (MGD)<sup>2</sup></b>	<b>Peak Wet Daily Flow (MGD)<sup>3</sup></b>
<b>Existing</b>	0.04	0.08	0.10
<b>Proposed</b>	0.12	0.24	0.31
<b>Net Change</b>	+0.08	+0.16	+0.21
<sup>1</sup> Per Table IV.L-2. <sup>2</sup> A factor of F is used to adjust Average Daily Flow Rate to Peak Dry Daily Flow Rate. <sup>3</sup> A factor of 1.3 is used to adjust Peak Dry Daily Flow Rate to Peak Wet Daily Flow Rate <b>SOURCE:</b> Colorado at Lake EIR Wastewater/Sewer System Technical Report, PSOMAS, June 2010.			

According to the City of Pasadena and as shown in the Exhibit 3 of the Wastewater/Sewer System Technical Report in Appendix J of this Draft EIR, the future peak wet flow level (d/D) has been calculated for the Mentor Avenue sewer, the Colorado Boulevard sewer, and the Lake Avenue sewer. The flow rates provided to the City for the purpose of this EIR analysis are roughly 10 percent higher than expected to allow for some variation and diversion of sewage flow to specific mainlines in the final design. In any design scenario, a minimum 20 percent water conservation factor would be required and achieved.

The data in Exhibit 3 of the Wastewater/Sewer System Technical Report within Appendix J of this EIR shows that with project implementation, sewage rates in the Mentor Avenue sewer system would decrease capacity on average by six percent, sewage rates in the Colorado Boulevard sewer system would decrease capacity on average by three percent, and sewage rates in the Lake Avenue sewer system would decrease capacity on average by seven percent. Although implementation of the proposed project is expected to decrease the capacity of the three sewer systems serving the project site, the decrease in capacity of the three sewer systems would not cause them to exceed their available capacity or be over 75 percent full, which the City of Pasadena defines as a safe loading capacity. Specifically, projected flows are estimated as follows:

- The 8-inch sewer beneath Mentor Avenue would flow on average at 28 percent full with a projected flow of 0.07 mgd and will not exceed available capacity.
- The 12-inch sewer beneath Colorado Boulevard would flow on average at 29 percent full with a projected flow of 0.29 mgd and will not exceed available capacity.
- The 10-inch sewer beneath Lake Avenue would flow on average at 31 percent full with a projected flow of 0.67 mgd and will not exceed available capacity.

Consequently, the proposed project will not require improvements to the existing off-site sewer system according to the City of Pasadena Department of Public Works.<sup>3</sup>

Sewer loading for the Lake Avenue connection can be partially reduced in the final design phase and shifted to the Colorado Boulevard and/or Mentor Avenue connection(s) in an effort to distribute sewage flows more evenly. Redistributing sewage flows in such a manner would reduce the less significant project impacts even further.

Downstream of the City of Pasadena, sewage is treated regionally by the LACSD. Implementation of the proposed project will decrease the capacity of the Chapel Avenue Trunk Sewer by at most 0.705 percent, the Allen Avenue Trunk Sewer by at most 04.935 percent, the San Jose Creek Water Reclamation Plant by at most 0.0624 percent, and the Whittier Narrows Water Reclamation Plant by at most 0.4057 percent. The City of Pasadena and/or LACSD would assess a sewer facility charge for increases of expected sewage volume rates. However, with implementation of mitigation measures, potential impacts to the local sewer system and regional wastewater treatment facilities would be less than significant.

## MITIGATION MEASURES

IV.F.1-1 At the time of construction design documents and if determined by the Department of Public Works, the applicant shall install one new 6-inch sewer lateral in Mentor Avenue or Lake Avenue, to Department of Public Works specifications. Since the lateral is not allowed to be larger than 6-inches, there is no ability to install a larger lateral in anticipation of future development.

IV.F.1-2 The City of Pasadena Department of Public Works shall approve all plans for the proposed installations prior to issuance of any building permit and all improvements shall be provided to the satisfaction of the City Engineer prior to issuance of Certificates of Occupancy.

IV.F.1-3 If so directed by the City of Pasadena Department of Public Works at the time a connection request is made, sewer loading for the proposed project shall be directed away from the Lake Avenue sewer system, which has relatively less available capacity, to the Colorado Boulevard or Mentor Avenue sewer systems to the satisfaction of the City Engineer.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Mitigation Measures IV.F.1-1 through IV.F.1-3 would ensure that sufficient improvements are provided with adequate capacity to serve the proposed project to the satisfaction of the City of Pasadena Department of Public Works. The applicant would be bound to providing improvements that are, at a minimum, sufficient to meet the needs of the proposed project. Consequently, with implementation of mitigation measures, potential impacts to the local sewer system and regional wastewater treatment facilities would be less than significant.

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<sup>3</sup> Email correspondence from Yannie Wu, PE, Associate Engineer, City of Pasadena Dept. of Public Works, dated December 7, 2009. See Exhibit 2 in the Appendix of the Wastewater/Sewer System Technical Report (EIR's Appendix J).

## CUMULATIVE IMPACTS

The proposed project, in conjunction with the 36 related projects identified in **Table III-3**, Related Projects, Environmental Setting, of this EIR, would result in an overall increase in sewage effluent generation. The related projects potentially upstream of the proposed project (Related Projects 4, 26, 28, and 36) have been mapped with the existing local sewer systems and are provided in the Wastewater/Sewer System Technical Report in Appendix J of this EIR. Most related projects do not fall within the tributary area of the Mentor Avenue, Colorado Boulevard, or Lake Avenue sewer lines. Specifically, only the projects shown in **Table IV.F.1-4** are upstream of the project site and would contribute flow to the sewers serving the proposed project (see Appendix J, Wastewater/Sewer System Technical Report, for a detailed breakdown of these calculations). A conservative estimate of the total flow increase by the 36 related projects identified in **Table III-3** is approximately 0.36 mgd.<sup>4</sup> If added to the 0.12 mgd flow from the proposed project, the total flow increase is estimated to be 0.48 mgd. When compared with the total existing capacity of the two County trunk sewers of 14.1 mgd that convey flow to the treatment facilities, this additional volume equates to an approximate four percent reduction in the full flow capacity, from 59 percent to 55 percent. When compared with the total existing capacity of the two treatment plants of 115 mgd which currently processes an average of 81 mgd, this additional volume equates to an approximate 1 percent reduction in the full flow capacity, from 30 percent to 29 percent.

<b>No.</b>	<b>Project</b>	<b>Tributary Sewer</b>	<b>Estimated Sewage Increase</b>	<b>Resulting Adjacent Sewer Flow Level (d/D)</b>
4	680 Colorado	Lake Avenue	0.04	46%
28	128 N. Oak Knoll	Lake Avenue	0.03	
26	220 N. Lake	Mentor Avenue	0.07	24%
36	680 E. Walnut	Colorado Boulevard	0.02	28%

**SOURCE:** Colorado at Lake EIR Wastewater/Sewer System Technical Report, PSOMAS, June 2010.

As shown in **Table IV.F.1-4**, there is sufficient capacity in the project-adjacent sewers in Mentor Avenue and Lake Avenue, to accommodate the related projects upstream. The sewer on Mentor Avenue has more capacity, and sewage from the proposed project might be directed away from the Lake Avenue sewer where possible (per Mitigation Measure IV.F.1-3). Furthermore, although the related projects result in an overall increase in sewage effluent, the other known development projects would be required to employ City mandated water conservation measures, resulting in wastewater reductions, similar to the proposed project. Therefore, since the related projects must implement water conservation measures to reduce wastewater generation, and provide localized improvements to the sewage system that may be necessary to maintain capacity on local sewer lines serving these projects, cumulative impacts related to wastewater service would be less than significant.

<sup>4</sup> Cumulative sewer generation calculations are provided in the Wastewater/Sewer System Technical Report in Appendix J of this EIR