

IV. Environmental Impact Analysis

M.2 Utilities and Service Systems— Wastewater

1. Introduction

This section of the Draft EIR analyzes the potential impacts of the Project with regard to the existing wastewater infrastructure and treatment facilities that serve the Project Site (Hillside Campus and South Campus). The analysis describes the existing wastewater system, including the City of Pasadena Water and Power (PWP) conveyance facilities and the Los Angeles County Sanitation Districts treatment facilities, calculates the wastewater to be generated by the Project, and evaluates whether sufficient capacity would be available to meet the Project's forecasted wastewater generation. The analysis is based, in part, on the *Utility Infrastructure Technical Report: Wastewater for ArtCenter College of Design Master Plan Project* (Utility Report) prepared by KPFF Consulting Engineers (March 15, 2017), which is included in Appendix N of this Draft EIR.

2. Environmental Setting

a. Regulatory Framework

(1) Pasadena Municipal Code

The Pasadena Municipal Code (PMC) includes provisions for new construction projects within the City. Chapter 13.24 of the PMC addresses sewer construction and maintenance, including sewer disconnection reimbursements, sewer repair reimbursements, construction reimbursement agreements, and the sewer reimbursement fund. Chapter 4.52 of the PMC, the sewer use charge ordinance, establishes sewer use rates and storm drain sewer use rates for properties in the City. Under these provisions, the City Controller is authorized to create a special activity fund for sanitary and storm drain sewer maintenance, repair, and construction. Chapter 4.53 of the PMC ensures that new development within the City pays its estimated cost for capacity upgrades to the City sewer system through the payment of the sewer facility charge. Fees paid per the sewer facility charge are deposited in the City's sewer facility charge fund.

(2) Pasadena Master Sewer Plan

The Pasadena Master Sewer Plan, prepared in January 2007, evaluates the capability of the City's existing sewer collection and pumping system to provide service through a planning period that extends to the year 2020. Given the magnitude of potential growth, the Master Sewer Plan identifies that the development and adoption of a revised sewer capital facility charge is desirable to generate revenues commensurate with the impact of new development on existing system capacity and provide for capital reinvestment. Currently, new developments in the City of Pasadena are required to pay a one-time Sewer Facility Charge based on their daily sewer discharge rate multiplied by \$6.38.

b. Existing Conditions

(1) Wastewater Infrastructure

Pasadena's local wastewater system, owned by the City and operated by the Department of Public Works Engineering Division, consists of two sewer pump stations, approximately 7,430 manholes, and approximately 350 miles of sewer pipelines ranging from 6 inches to 42 inches in diameter. The City's location in the foothills of the San Gabriel Mountains allows the wastewater system to operate primarily via gravity flow. Wastewater generated in the City is carried by the local pipe system to trunk wastewater lines operated by the LACSD, located south of the City boundary.

Currently, there is an 8-inch sewer main along Carnarvon Drive that serves the Hillside Campus. There are several sewer mains that serve the South Campus. These include a 24-inch line and a 16-inch line fronting the South Campus properties along Raymond Avenue, a 12-inch sewer main fronting the South Campus properties along Glenarm Street, and an 8-inch sewer main fronting the South Campus along Arroyo Parkway. Wastewater from the South Campus is conveyed through the 24-inch and the 8-inch mains along Raymond Avenue and Arroyo Parkway, respectively.

(2) Wastewater Generation

Although the LACSD has developed general sewage generation rates, they are somewhat limited and do not include rates applicable to existing uses on-site. Therefore, the City of Los Angeles Bureau of Sanitation (LASAN) sewer generation table is being used to estimate load from the existing condition. Table IV.M.2-1 on page IV.M.2-3 presents the existing wastewater generation estimated for the uses currently on the Project Site.

**Table IV.M.2-1
Estimated Existing Wastewater Generation**

Connection To:	Existing Use	Average Daily Flow Rate (gpd/unit) ^a	Size of Use	Average Daily Wastewater Generation (gpd)
Hillside Campus				
8-Inch Main in Carnarvon Drive	Ellwood Building (Academic/Administrative)	150/1,000 gsf	207,168 gsf	31,075
	South Building (Maintenance/Operations)	20/1,000 gsf	4,200 gsf	84
	Sinclair Pavilion (Amenity/Lounge)	80/1,000 gsf	3,500 gsf ^b	280
<i>Hillside Campus Total</i>				31,439
South Campus				
24-Inch Main in Raymond Avenue	870 Building (Academic/Administrative)	150/1,000 gsf	35,772 gsf	5,366
	888 Building (Shop Space)	20/1,000 gsf	11,775 gsf	236
	950 Building (Academic/Administrative)	150/1,000 gsf	95,034 gsf	14,255
8-Inch Main in Arroyo Parkway	1111 Building (65% Academic/Administrative/ 35% Office)	150/1,000 gsf	131,209 gsf	19,681
<i>South Campus Total</i>				39,718
Overall Total Existing Wastewater Generation				71,157
<p><i>gsf = gross square feet</i> <i>gpd = gallons per day</i></p> <p>^a The average daily flow based on City of Los Angeles sewer generation factors, as presented in Figure 2 of Appendix N.</p> <p>^b Only 145 square feet are enclosed in the existing condition; however, the average daily wastewater generation is based on the total size of the space regardless of whether it is an open-air or an enclosed structure.</p> <p>Source: KPFF, 2017.</p>				

(3) Sewage Treatment

All sewer flow generated in the City is conveyed to LACSD treatment facilities, which consist of the San Jose Creek Water Reclamation Plant (WRP) next to the City of Whittier, Whittier Narrows WRP in the City of El Monte, and Los Coyotes WRP in the City of Cerritos. The combined design capacity at the San Jose Creek WRP, Whittier Narrows WRP, and Los Coyotes WRP is approximately 152.5 million gallons per day (gpd), and

combined, these facilities currently process approximately 92.6 million gpd of wastewater. Accordingly, the combined available capacity for future development at San Jose Creek WRP, Whittier Narrows WRP, and Los Coyotes WRP is approximately 59.9 million gpd.

3. Environmental Impacts

a. Methodology

The analysis of Project impacts on wastewater infrastructure and treatment capacity is based on the Utility Report included in Appendix N of this Draft EIR. The Utility Report calculates the anticipated wastewater flows to be generated by the Project using wastewater generation factors provided by the LASAN. Given the existing capacity of the sanitary sewer system serving the Hillside Campus and South Campus and the Project Site's future demand, an assessment was made of the impacts to the sanitary sewers and the downstream sewers and treatment plants. Data regarding the existing physical features and capacity of the system is based on information provided by the City of Pasadena and ArtCenter.

To evaluate potential impacts relative to wastewater treatment capacity, this analysis evaluates whether adequate treatment capacity at the San Jose Creek WRP, Whittier Narrows WRP, and the Los Coyotes WRP would be available to accommodate the Project's estimated sewage generation based on data available from the LACSD.

b. Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the Project would have a significant impact if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.
- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

c. Project Design Features

No specific project design features are proposed with regard to wastewater generation.

d. Analysis of Project Impacts

Impact M.2-1: The Project would not exceed wastewater treatment requirements established by the Los Angeles Regional Water Quality Control Board (RWQCB) or the available capacities or existing commitments of the WRPs serving the City.

Wastewater generation would occur incrementally throughout construction of the Project as a result of construction workers on-site. However, such use would be temporary and nominal. In addition, construction workers would typically utilize portable restrooms, which would not contribute wastewater flows to the City's wastewater system. Therefore, wastewater generation from Project construction activities is not anticipated to cause a measurable increase in wastewater flows.

As shown in Table IV.M.2-2 on page IV.M.2-6, the estimated overall wastewater generated by the Project at Master Plan buildout would be 191,679 gpd. Therefore, as shown in Table IV.M.2-3 on page IV.M.2-7, the Project's net estimated daily sewer generation would be 120,522 gpd. As such, this net increase from the Project would represent approximately 0.20 percent of the available process flow capacity for the combined WRPs and would remain under the maximum combined available capacity of 59.9 million gpd at San Jose Creek WRP, Whittier Narrows WRP, and Los Coyotes WRP. This increase in wastewater flows would not exceed the treatment requirements of the Los Angeles RWQCB. Therefore, impacts related to wastewater would be less than significant.

Impact M.2-2: The Project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

The proposed improvements at the Hillside Campus would reduce sewer generation at this location due to reallocation of program space. Sanitary sewer service to the South Campus from the surrounding streets is provided by the City of Pasadena. Based on available record data, a 24-inch sewer main and a 16-inch sewer main front the South Campus along Raymond Avenue; a 12-inch sewer main and a 24-inch sewer main front the South Campus along Glenarm Street; and an 8-inch sewer main fronts the South Campus along Arroyo Parkway. As provided in the City Master Sewer Plan, a sewage operating

**Table IV.M.2-2
Estimated Wastewater Generation Resulting from the Project**

Connection To:	Proposed Use	Average Daily Flow Rate (gpd/1,000 gsf)^a	Size of Use	Average Daily Wastewater Generation (gpd)
Hillside Campus				
8-Inch Main in Carnarvon Drive	Ellwood Building (Academic/Administrative)	150/1,000 gsf	207,168 gsf	31,075
	South Building (Transportation Hub)	80/1,000 gsf	15,520 gsf	1,242
	Sinclair Pavilion (Amenity/Lounge)	80/1,000 gsf	3,500 gsf	280
<i>Hillside Campus Total</i>				32,597
South Campus				
24-Inch Main in Raymond Avenue	870 Building (Academic/Administrative)	150/1,000 gsf	35,772 gsf	5,366
	888 Building (Student Housing) (Amenity/Lounge)	75/bed 80/1,000 gsf	650 beds 76,000 gsf	48,750 6,080
	950 Building (Academic/Administrative)	150/1,000 gsf	95,034 gsf	14,255
	988 Building (Student Housing)	75/bed	500 beds	37,500
8-Inch Main in Arroyo Parkway	1101 Building (Student Housing) (Theatre)	75/bed 4/seat	350 beds 300 seats	26,250 1,200
	1111 Building (Academic/Administrative)	150/1,000 gsf	131,209 gsf	19,681
<i>South Campus Total</i>				159,082
Overall Project Total Wastewater Generation				191,679
<p><i>gsf = gross square feet</i></p> <p><i>gpd = gallons per day</i></p> <p>^a <i>The average daily flow based on City of Los Angeles sewer generation factors, as presented in Figure 2 of Appendix N.</i></p> <p><i>Source: KPFF, 2017.</i></p>				

**Table IV.M.2-3
Estimated Net Wastewater Generation Resulting from the Project**

Connection To:	Average Daily Wastewater Generation (gpd)
Hillside Campus	
Existing Uses	31,439
Proposed Uses	32,597
<i>Hillside Campus Net Generation (Proposed – Existing)</i>	<i>1,158</i>
South Campus	
Existing Uses	39,718
Proposed Uses	159,082
<i>South Campus Net Generation (Proposed – Existing)</i>	<i>119,364</i>
Overall Project (Hillside Campus and South Campus)	
Existing Uses	71,157
Proposed Uses	191,679
<i>Overall Project Net Generation (Proposed – Existing)</i>	<i>120,522</i>
<hr/> <i>gpd = gallons per day</i> <i>Source: Eyestone Environmental, 2017.</i>	

capacity of 75 percent is a standard for safe loading capacity.¹ Assuming a design capacity at 75 percent full, the design capacities for the 24-inch and 16-inch mains along Raymond Avenue are 19.34 cubic feet per second (cfs) and 5.20 cfs, respectively. The design capacities for the 12-inch and 24-inch sewer mains along Glenarm Street are 1.19 cfs and 16.29 cfs, respectively. The design capacity for the 8-inch sewer main along Arroyo Parkway is 0.7 cfs. Although Glenarm Street has sewer infrastructure available to the Project, for the purposes of this impact analysis, the assumption is that the Project would only discharge to the sewer mains along Raymond Street and Arroyo Parkway. Based on the breakdown of estimated sewer flows tributary to each sewer main, the Project would only account for approximately 0.95 percent of the 24-inch sewer main along Raymond and approximately 10.42 percent of the sewer main along Arroyo Parkway. Therefore, existing wastewater conveyance facilities would have sufficient capacities to accommodate the wastewater flow generated by Project buildout at the South Campus.

As discussed above, the estimated overall wastewater generated by the Project at Master Plan buildout would be 191,679 gpd. The Project's net estimated daily sewer generation of 120,522 gpd would remain under the maximum combined available capacity

¹ *City of Pasadena Master Sewer Plan, Section 5.2.1, Gravity Pipeline Design Criteria, January 2007.*

of 59.9 million gpd at San Jose Creek WRP, Whittier Narrows WRP, and Los Coyotes WRP. Therefore, existing treatment facilities would have sufficient capacities to accommodate wastewater generated by the Project.

Based on the above, the Project would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities and, as such, would result in a less-than-significant impact related to wastewater generation.

4. Cumulative Impacts

The City of Pasadena manages its sewer infrastructure through the Sewer Master Plan. The Sewer Master Plan is prepared by the City's Department of Public Works and forecasts sewer flows based on buildout of City's General Plan. Based on the forecasts, the City identifies sewer lines that would require upgrades. The sewer mains fronting the Hillside Campus and South Campus were not identified to have insufficient capacity based on the analysis performed for the Sewer Master Plan. In addition, all new development in the City is subject to sewer capacity considerations as a part of the City approval process.

As discussed above, the Project would result in an additional overall generation of wastewater flow. However, the buildout of the General Plan is estimated to generate approximately 23.1 million gpd of wastewater by the year 2035. As such, the Project's estimated net wastewater generation of 120,522 gpd would only account for approximately 0.52 percent of the cumulative growth. Thus, the Project's contribution to cumulative wastewater generation would not be considerable and the Project would have a less-than-significant impact related to wastewater generation.

5. Mitigation Measures

Project-level and cumulative impacts with regard to wastewater generation would be less than significant. Therefore, no mitigation measures are required.

6. Level of Significance After Mitigation

Project-level and cumulative impacts with regard to wastewater generation would be less than significant without mitigation.