

APPENDIX N.2

WASTEWATER INFRASTRUCTURE TECHNICAL REPORT



**1100 EAST FIFTH STREET MIXED-USE PROJECT
UTILITY INFRASTRUCTURE TECHNICAL REPORT: WASTEWATER
OCTOBER 19, 2020**

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

The Project would involve the demolition of the existing warehouses and surface parking lot, and the construction of an up to 249,758-square-foot mixed-use building including up to 220 live/work units, approximately 22,725 square feet of open space for residents, up to 46,548 square feet of commercial uses, and associated parking facilities. Eleven percent of the units (approximately 25 live/work units) would be deed-restricted for Very Low Income households. The proposed building would be up to 110 feet (8 above-ground levels) tall plus three levels of subterranean parking and a lower quarter level for storage. The Project also proposes the ability to implement an increased commercial option that would provide the Project the flexibility to increase the commercial square footage provided by the Project within the same building parameters and, in turn, reduce the overall amount of live/work from 220 live/work units to 200 live/work units.

1.2. SCOPE OF WORK

As a part of the Environmental Impact Report for the Project, the purpose of this report is to analyze the potential impact of the Project to the City's wastewater infrastructure systems.

2. REGULATORY FRAMEWORK

The City of Los Angeles has one of the largest sewer systems in the world including more than 6,700 miles of sewers serving a population of more than four million. The Los Angeles sewer system is comprised of three smaller systems: Hyperion Sanitary Sewer System, Terminal Island Water Reclamation Plant Sanitary Sewer System, and Regional Sanitary Sewer System.

The Project Site lies within the Hyperion Service Area served by the Hyperion Sanitary Sewer System and the Hyperion Treatment Plant. In February 2017, a Sewer System Management Plan (SSMP) was prepared for the Hyperion Sanitary Sewer System pursuant to the State Water Control Board's (SWRCB) May 2, 2006 Statewide General Waste Discharge Requirements (WDRs)¹.

Sewer permit allocation for projects that discharge into the Hyperion Treatment Plant is regulated by Ordinance No. 166,060 adopted by the City in 1990. This Ordinance established an additional annual allotment of 5.0 million gallons per day, of which 34.5 percent (1.725 million gallons per day) is allocated for priority projects, 8 percent (0.4 million gallons per day) for public benefit projects, and 57.5 percent (2.875 million gallons per day) for non-priority projects (of which 65 percent is for residential projects and 35 percent for non-residential projects).

¹ City of Los Angeles Department of Public Works, Bureau of Sanitation, Sewer System Management Plan Hyperion Sanitary Sewer System, February 2017.

The City of Los Angeles Municipal Code (LAMC) includes regulations that allow the City to assure available sewer capacity for new projects and require fees for improvements to the infrastructure system. LAMC Section 64.15 requires that the City perform a Sewer Capacity Availability Request (SCAR) analysis when any person seeks a sewer permit to connect a property to the City's sewer collection system, proposes additional discharge through their existing public sewer connection, or proposes a future sewer connection or future development that is anticipated to generate 10,000 gallons or more of sewage per day. A SCAR is an analysis of the existing sewer collection system to determine if there is adequate capacity existing in the sewer collection system to safely convey the newly generated sewage to the appropriate sewage treatment plant.

LAMC Section 64.11.2 requires the payment of fees for new connections to the sewer system to assure the sufficiency of sewer infrastructure. New connections to the sewer system are assessed a Sewerage Facilities Charge. The rate structure for the Sewerage Facilities Charge is based upon wastewater flow strength, as well as volume. The determination of wastewater strength for each applicable project is based on City guidelines for the average wastewater concentrations of two parameters (biological oxygen demand and suspended solids) for each type of land use. Fees paid to the Sewerage Facilities Charge fees are deposited in the City's Sewer Construction and Maintenance Fund for sewer and sewage-related purposes, including but not limited to industrial waste control and water reclamation purposes.

In addition, the City establishes design criteria for sewer systems to assure that new infrastructure provides sewer capacity and operating characteristics to meet City Standards (Bureau of Engineering Special Order No. SO06-0691). Per this Special Order, lateral sewers, which are sewers 18 inches or less in diameter, must be designed for a planning period of 100 years. The Special Order also requires that sewers be designed so that the peak dry weather flow depth during their planning period shall not exceed one-half the pipe diameter.²

In 2006 the City approved the Integrated Resources Plan, which incorporates a Wastewater Facilities Plan.³ The Integrated Resources Plan was developed to meet future wastewater needs of more than 4.3 million residents expected to live within the City by 2020. In order to meet future demands posed by increased wastewater generation, the City has chosen to expand its current overall treatment capacity, while maximizing the potential to reuse recycled water through irrigation, and other approved uses.

² <http://www.environmentla.org/programs/thresholds/M-Public%20Utilities.pdf>.

³ City of Los Angeles, Department of Public Works, LA Sewers Website, Integrated Resources Plan Facilities Plan, Summary Report, December 2006.

3. EXISTING CONDITIONS

The Project Site is 54,009 sq. ft. and is currently occupied by three single story warehouse buildings totaling approximately 35,445 sq. ft., and an at grade concrete parking lot covering the remainder of the Site. Sanitary sewer service to the Project Site from the surrounding streets is provided by the Bureau of Sanitation (BOS).

Based on available record data provided by the City, there is an 8-inch vitrified clay pipe (VCP) sewer line in Seaton Street flowing south. Based upon the City of Los Angeles Bureau of Engineering’s online Navigate LA database, the capacity of this line is 0.79 cubic feet per second (cfs) (510,555 gallons per day (gpd)). Available records indicate that Seaton Street has five (5) sewer wyes and two (2) laterals allocated to the Project Site.

Based on available record data provided by the City, there is a 6-inch vitrified clay pipe (VCP) sewer line in East Fifth Street flowing east. Based upon the Navigate LA database, the capacity of the 6-inch line is 0.23 cubic feet per second (cfs) (148,642 gallons per day (gpd)) Available records indicate the 6-inch main in East Fifth Street has three (3) sewer wyes allocated to the Project Site.

Wastewater generation estimates for the existing Project Site have been prepared based on BOS sewerage generation factors, as summarized in Table 1 below.

Table 1 – Estimated Existing Wastewater Generation			
Land Use	Units	Generation Rate (gpd/unit)	Total Sewage Generation (gpd)
Existing			
Warehouse	35,445 sf	30/KGSF	0*
Subtotal Existing			0*
*As the existing warehouses on-site have been vacant prior to the start of this study, existing wastewater generation is assumed to be zero.			

4. SIGNIFICANCE THRESHOLDS

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to wastewater. These questions are as follows:

Would the project:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation 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 adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

In the context of the above questions from the CEQA Guidelines, the *L.A. CEQA Thresholds Guide* states that a project would normally have a significant wastewater impact if:

- The project would cause a measureable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained; or
- The project's additional wastewater flows would substantially or incrementally exceed the future scheduled capacity of any one treatment plant by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements.

These thresholds are applicable to the Project and as such are used to determine if the Project would have significant wastewater impacts.

5. METHODOLOGY

The methodology for determining the significance of a project as it relates to a project's impact on wastewater collection and treatment infrastructure is based on the *L.A. CEQA Thresholds Guide*. This methodology involves a review of the project's environmental setting, project impacts, cumulative impacts, and mitigation measures (if required). The following has been considered as part of the determination for this Project:

Environmental Setting

- Location of the Project and appropriate points of connection to the wastewater collection system on the pertinent Wye Map;
- Description of the existing wastewater system which would serve the Project, including its capacity and current flows.
- Summary of adopted wastewater-related plans and policies that are relevant to the Project area.

Project Impacts

- Evaluate the Project wastewater needs (anticipated daily average wastewater flow), taking into account design or operational features that would reduce or offset service impacts;
- Compare the Project's wastewater needs to the appropriate sewer's capacity and/or the wastewater flows anticipated in the Wastewater Facilities Plan or General Plan.

This report analyzes the potential impacts of the Project on the existing public sewer infrastructure by comparing the estimated Project wastewater generation with the calculated available capacity of the existing facilities.

Pursuant to LAMC Section 64.15, BOS Wastewater Engineering Division made a preliminary analysis of the local and regional sewer conditions to determine if available wastewater conveyance and treatment capacity exists for future development of the Project Site. BOS's approach consisted of the study of a worst-case scenario envisioning peak demands from the relevant facilities occurring simultaneously on the wastewater system. A combination of flow gauging data and computed results from the City's hydrodynamic model were used to project current and future impacts due to additional sewer discharge. The data used in this report are based on the findings of the BOS preliminary analysis. Refer to Exhibit 1 for the sewer will serve letter for the Project, which contains the results of the BOS preliminary analysis.

6. PROJECT IMPACTS

6.1. CONSTRUCTION

The Project would result in a temporary increase in wastewater generation as a result of construction activities at the Project Site. Wastewater generation would occur incrementally throughout construction of the Project as a result of construction workers on-site. However, construction workers would utilize portable restrooms, which would not contribute to wastewater flows to the City's wastewater system. Thus wastewater generation from Project construction activities is not anticipated to cause any increase in wastewater flows. Therefore, Project impacts associated with construction-period wastewater generation would be less than significant.

The Project will require construction of new on-site infrastructure to serve the new building, and potential upgrade and/or relocation of existing infrastructure. Construction impacts associated with wastewater infrastructure would primarily be confined to trenching for miscellaneous utility lines and connections to public infrastructure. Installation of wastewater infrastructure will be limited to on-site wastewater distribution, and minor off-site work associated with connections to the public main. Although no upgrades to the public main are anticipated, minor off-site work is required in order to connect to the public main. Therefore, as part of the Project, a construction management plan would be implemented to reduce any temporary pedestrian and traffic impacts during construction, including maintaining two lanes of travel and ensuring safe pedestrian access and adequate emergency vehicle access. Overall, when considering impacts resulting from the installation of any required wastewater infrastructure, all impacts are of a relatively short-term duration (i.e., months) and would cease to occur once the installation is complete. Therefore, Project impacts on wastewater associated with construction activities would be less than significant.

6.2. OPERATION

In accordance with the *L.A. CEQA Thresholds Guide*, the base estimated sewer flows were based on the sewer generation factors for the Project's uses. Based on the type of use and generation factors, the Project will generate approximately 46,483 gallons per day (gpd) of wastewater. Under the increased commercial "Flex Option", the project will generate approximately 43,512 gpd of wastewater. Wastewater generation estimates have been prepared based on the City of LA Bureau of Sanitation sewerage generation factors for residential and commercial categories, and are summarized in Table 2 below.

Table 2 – Estimated Proposed Sewer Generation				FLEX OPTION	
Land Use	Units	Generation Rate (gpd/unit) ^(a)	Total Sewer Generation (gpd)	Units	Total Sewer Generation(gpd) Under Flex Option
Existing					
Warehouse	35,000 SF	30/KGSF	0*	35,000 SF	0*
<i>Subtotal Existing</i>			0*	-	0*
Proposed					
Apartment: 1 Bedroom	191 DU	185/DU ²	35,335	173 DU	32,005
Apartment: 3 Bedroom	29 DU	265/DU ²	7,685	27 DU	7,155
Commercial Use	46,548 SF	50/KGSF	2,327	64,313 SF	3,216
Open Space	22,725 SF	50/KGSF	1,136	22,725 SF	1,136
<i>Subtotal Proposed</i>			46,483		43,512
<i>Net Increase</i>			46,483		43,512
SF = square feet gpd = gallons per day DU = dwelling unit ¹ Generation Rates per Bureau of Sanitation – Sewer Generation Factors for Residential and Commercial Categories. ² Generation Rates provided by the City of Los Angeles to account for Live/Work *As the existing warehouses on-site have been vacant prior to the start of this study, existing wastewater generation is assumed to be zero.					

The sewer will serve letter was submitted to see whether the existing public infrastructure can accommodate the Project. The Bureau of Sanitation has analyzed the Project demands in conjunction with existing conditions and forecasted growth, and has approved the Project to discharge up to 46,483 gpd. Therefore, impacts on wastewater would be less than significant for either option. See Exhibit 1 for sewer will serve letter. **[PENDING – Sent a request to Bureau of Sanitation for a new will serve to reflect the Live/Work component.]**

As further discussed below, the existing design capacity of the Hyperion Service Area is approximately 550 million gallons per day (consisting of 450 mgd at the Hyperion Treatment Plant, 80 mgd at the Donald C. Tillman Water Reclamation Plant, Reclamation Plant, and 20 mgd at the Los Angeles–Glendale Water Reclamation Plant). The Project’s proposed wastewater generation is approximately 0.047 mgd. Currently up to 300 mgd is treated at the Hyperion Treatment Plant resulting in a treatment capacity of 150 mgd, which means the Project would use 0.03 percent of the available capacity. Consequently, impacts on wastewater treatment capacity are less than significant.

The project was analyzed with sewage discharge being divided evenly between Fifth Street and Seaton Street. As stated above, the existing capacity of the 8-inch sewer line in Seaton Street is approximately 0.79 cubic feet per second (cfs) (510,555 gallons per day (gpd)), and the existing capacity of the 6-inch sewer line in East 5th Street is 0.23 cubic feet per second (148,642 gallons per day (gpd)). The Project's net increase in sewage generation is up to approximately 46,483 gpd. This represents approximately 4.5 percent of the pipe's capacity in Seaton Street, and approximately 15.64 percent of the pipe's capacity in East 5th Street. Due to this fact, and the analysis performed by the City of Los Angeles Bureau of Sanitation, impacts on wastewater infrastructure would be less than significant.

6.3. CUMULATIVE IMPACTS

The Project will result in the additional generation of sewer flow. However, as discussed above, BOS has conducted an analysis of existing and planned capacity and determined that adequate capacity exists to serve the Project. Similarly, future projects connecting to the same sewer system are required to obtain a sewer connection permit and submit a Sewer Capacity Availability Request (SCAR) to BOS. The analysis by BOS takes into consideration previously approved SCARs as part of their review. If system upgrades are required as a result of a given project's additional flow, arrangements would be made between the related project and BOS to construct the necessary improvements.

In addition to the City's SCAR analysis, a related projects list has been generated. There are 27 related projects, which consist of residential, schools, retail, restaurants, museums, hotels, offices, gyms, cinemas, and event space. The total increase in wastewater generation for the related projects is approximately 1.39 million gallons per day (mgd). Combined with the Project, the increase in wastewater generation is approximately 1.44 mgd. Refer to Exhibit 2 for a breakdown of the related projects and associated wastewater generation.

Wastewater generated by the Project, and related projects, would be conveyed via the existing wastewater conveyance systems for treatment at the Hyperion Treatment Plant system. As previously stated, based on information from BOS, the existing design capacity of the Hyperion Service Area is approximately 550 million gallons per day (mgd)⁴ and the existing average daily flow for the system is approximately 300 mgd.⁵ The estimated wastewater generation increase of the Project and related projects combined would be 1.44 mgd, which represents approximately 0.58 percent of the available capacity in the system. The related projects would also be required to adhere to the BOS's annual wastewater flow increase allotment.

⁴ City of Los Angeles Department of Public Works, Bureau of Sanitation, Water Reclamation Plants, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p?_adf.ctrl-state=oe8lwklid_4&_afLoop=28344654751341747#!, accessed October 26, 2016.

⁵ City of Los Angeles Department of Public Works, Bureau of Sanitation, Sewer System Management Plan Hyperion Sanitary Sewer System, February 2015.

7. LEVEL OF SIGNIFICANCE

Based on the analysis contained in this report no significant impacts have been identified to wastewater infrastructure for this Project.

EXHIBIT 1

EXHIBIT 2

Related Projects Sewer Generation			
Land Use	Units	Generation Rate ² (gpd/unit)	Total Generation (gpd)
Residential	6,725 DU ¹	150/DU	1,008,750
School	300 Students	11/Student	3,300
Retail	409,175 SF	25/1000 SF	10,229
Restaurant	5,656 Seats ³	30/Seat	169,680
Museum	42,770 SF	30/1000 SF	1,283
Hotel	693 Rooms	120/Room	83,160
Office	715,548 SF	120/1000 SF	85,866
Warehouse	316,632 SF	30/1000 SF	9,499
Gym	6,378 SF	650/1000 SF	4,146
Cinema	49 Seat	3/Seat	147
Bar	13,831 SF	720/1000SF	9,958
Event Space	8,157 SF	350/1000 SF	2,855
TOTAL			1,388,873
SF = square feet gpd = gallons per day DU = dwelling unit ¹ Assumes all units as 2-bedroom units. ² Consumption Rates Based on Bureau of Sanitation Sewer Generation Factors for Residential and Commercial Categories. ³ Assumes 30 square feet per seat.			