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## V. ENVIRONMENTAL IMPACT ANALYSIS

### H. UTILITIES

### 3. SANITARY SEWERS

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#### ENVIRONMENTAL SETTING

The City of Los Angeles Department of Public Works, Bureau of Sanitation Division provides sewer conveyance infrastructure and wastewater treatment services to the Project area. The Hyperion Treatment Plant (HTP), located directly west of the Los Angeles International Airport in Playa Del Rey, provides treatment capacity for all wastewater flows generated within the Central Business District Redevelopment Project Area. In December of 1998, the HTP was upgraded to provide full secondary treatment for all influent based on an average dry weather flow of 450 million gallons per day (mgd). The HTP currently processes average wastewater flows of approximately 350 mgd.<sup>1</sup>

The Hyperion Service Area (HSA) encompasses approximately 328,000 acres, or approximately 515 square miles, of the greater Los Angeles area. The HSA also serves 53,000 acres outside the jurisdiction of the City of Los Angeles on a contract basis. The HSA includes approximately 96 percent of the total area served by the LADWP.

#### Local Infrastructure

Existing sewer lines serving the Project Site include a network of six-, eight-, and ten-, twelve-, and 18-inch lines surrounding the Project Site and Exposition Park. These lines feed into a 44-inch pipe under Exposition Boulevard and a 75-inch pipe in Rodeo Road.

In 1998, several communities in South Los Angeles suffered severe sewage spills during the unusually heavy rainstorms of El Niño because of the failure of the main sewer, the North Outfall Sewer (NOS). The NOS is over 70 years old and is lined with holes and cracks from normal wear and tear, and it is filled nearly to capacity even in dry weather. The sewage overflows were caused by a combination of the age, size, and condition of NOS along with the heavy rains. In September 1998, the Regional Water Quality Control Board (RWQCB) issued a cease and desist order requiring the City of Los Angeles to complete construction of several new sewers throughout the City in approximately seven years, including the East Central Interceptor Sewer (ECIS).

The North Outfall Sewer - East Central Interceptor Sewer (NOS-ECIS) is a new sewer line currently under construction that will allow wastewater to be diverted from the middle portion of the existing NOS so that NOS can be rehabilitated and to provide additional capacity for projected wastewater

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<sup>1</sup> *City of Los Angeles, Department of Public Works, Bureau of Sanitation, July 29, 2003.*

flows. ECIS will extend from the north part of Baldwin Hills in Culver City to just east of the Los Angeles river near Mission Road making it approximately eleven miles long. The first phase of ECIS construction began in April 2001 and will be completed by December 1, 2003. Unit 3W of the ECIS project line runs east/west through Exposition Boulevard between Grand Avenue and Arlington Avenue. This extension runs north of and adjacent to Exposition Park.

The Project Site is currently developed with the Los Angeles Memorial Coliseum, a multi-purpose outdoor stadium with a maximum seating capacity of 92,500 persons. Several ancillary structures are located on-site adjacent to and surrounding the Coliseum. These structures include a museum, retail shop, ticket booths, restroom facilities, and concession-related buildings. The site is situated within Exposition Park, which is developed with several other publicly-oriented facilities, including the Los Angeles Memorial Sports Arena, the California Science Center, and the County Museum of Natural History, among others.

The Coliseum has hosted an average of 34 events per year over the past three calendar years (1999 through 2002) with a total average annual attendance of 259,087 persons, or 32,386 per event.<sup>2</sup> Full spectator capacity at the Coliseum (92,500 persons) was not reached on any occasion during the aforementioned three-year study period, and has only been reached on infrequent occasions throughout the history of the stadium. However, the existing sewer system infrastructure at the Coliseum is designed to accommodate its maximum seating capacity at any one time. For a more detailed discussion of the parameters of time period and attendance data utilized in this study, see Section IV.B of this report, Analytical Assumptions.

Sewage is currently being generated on the Project Site from a variety of uses, the most significant of these being public restrooms, showers in the locker rooms, and concession stand/food preparation uses. In addition to these event-specific uses, the daily operation of the Coliseum Commission staff offices and ticket offices generate a comparatively small amount of sewage. It should be noted that the majority of annual on-site sewage generation occurs during Coliseum events. Sewage generation on-site is reduced during periods when no stadium events are being held. Table V.H.3-1 indicates the estimated total amount of sewage generated on the Project Site under existing conditions based on maximum capacity on an event day. It should be noted that maximum capacity at the Coliseum never occurred over the three-year study period analyzed to determine average events per year. Correspondingly, maximum capacity has only been reached on infrequent occasions throughout the history of the Coliseum. As shown, at maximum capacity an estimated 370,000 gallons of sewage is generated per event on the Project Site by the existing Coliseum and its related facilities. Based on the average rate of 34 events per year, this results in an annual average of approximately 12.6 million gallons per year.

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<sup>2</sup> These 34 average annual events do not include non-ticketed events.

**Table V.H.3-1  
Existing Wastewater Generation**

<b>Development</b>	<b>Size (seats)</b>	<b>Generation Rate<sup>a</sup> (gallons/day/seat)<sup>b</sup></b>	<b>Total Generation (gpd)</b>
Coliseum Seats	92,500	4	370,000
<b>Total Existing Wastewater Generation per Event</b>			<b>370,00</b>
<b>Total Existing Wastewater Generation per Year</b>			<b>12,580,000</b>
<sup>a</sup> City of Los Angeles Department of Public Works, Bureau of Sanitation, July 29, 2003.			
<sup>b</sup> Gallons per day are for event days.			

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

A project would have a significant impact on sanitary sewer systems if its implementation would result in a measurable increase in wastewater generation to a point where it would cause a sewer line to become constrained, or if the project's wastewater flows would substantially or incrementally exceed the capacity of existing or planned wastewater conveyance systems or treatment facilities that serve the area.

### Project Impacts

#### Temporary Construction Impacts

Project construction would involve excavation and grading activities in the immediate vicinity of the Coliseum structure. Utility infrastructure, including existing sewer lines would be upgraded as necessary to accommodate new connections. Such improvements would be limited to the feeder lines connecting the Coliseum to the main sewer system and would not require disruption of the existing main lines. Therefore, construction activities would not result in a significant impact upon the existing sewer system infrastructure.

#### Operational Impacts

Wastewater generation associated with the Proposed Project was calculated using generation factors based on land use, as provided by the City of Los Angeles.<sup>3</sup> The estimated net increase was analyzed relative to infrastructure and treatment plant capacity. While reducing the maximum attendance capacity

<sup>3</sup> City of Los Angeles, Department of Public Works, Bureau of Sanitation, July 29, 2003.

for all events, the Proposed Project would increase the total number of sewage generators on the site through the replacement of existing restroom and concession facilities with a greater number of new facilities, the expansion of the existing home and visiting team locker rooms, the construction of the new food service/maintenance building, the development of separate club level concession counters and lounges, the construction of approximately 200 private suites with wet bar and bathroom facilities, and more expansive press box facilities. However, it should be noted that event-related sewage generation would remain a direct function of attendance levels, with only as many restrooms and concession stands operating as necessary to meet the need at any given event. As a result, a net increase in the number of such sewage generating facilities would not necessarily result in a corresponding increase in on-site sewage generation.

For the purposes of this analysis, it has been assumed that all existing sewage generating uses would continue in the renovated Coliseum. Projected on-site sewage generation with implementation of the Proposed Project is presented in Tables V.H.3-2 and V.H.3-3. These estimates assume maximum capacity and that the renovated Coliseum would host 64 events per year. The estimates also assume that the ancillary structures will be operable daily throughout the year. As stated above, maximum capacity at the Coliseum has occurred infrequently over its history, and not once in the years between 1999 and 2002.

As shown in Table V.H.3-2 above, the Proposed Project would be estimated to generate approximately 390,000 gallons of sewage per event, assuming maximum attendance at all Coliseum events. Table V.H.3-3 shows that ancillary structures will generate approximately 6,000 gallons of wastewater per day, or almost 2.2 million gallons per year, unrelated to the number of events held. This represents an increase of approximately 20,000 gallons per event over existing sewage generation on event days at the Coliseum and an increase of 6,000 gallons daily on non-event days. Assuming the per-event generation of 384,000 gallons of sewage, and 46 events per year, all at maximum capacity, Project sewage generation would be approximately 18 million gallons per year. It should be noted that the maximum possible sewage consumption from the site experienced during any Coliseum event could be reduced from projected levels upon implementation of the Proposed Project. This reduction would be accomplished through the installation of a more water-efficient infrastructure and fixtures which could result in a reduction in the average per-person per-event sewage generation. Additionally, it is unlikely that this maximum sewage generation situation would occur in the future.

The estimated existing and Proposed Project sewer generation rates are based on a sold-out scenario, where the stadium is at maximum capacity. The City of Los Angeles Department of Public Works, Bureau of Sanitation has determined that impacts on City of Los Angeles sewer services by the Proposed Project will be less than significant, assuming maximum capacity conditions.<sup>4</sup> Additionally, the HTP has on average 100 million gpd of remaining capacity daily. The Proposed Project is anticipated to contribute approximately 6,000 gallons per day on a daily basis and approximately 384,000 gallons of wastewater per event day to the average daily intake of 350 million gallons at the HTP. This represents an

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<sup>4</sup> *City of Los Angeles, Department of Public Works, Bureau of Sanitation, July 29, 2003.*

**Table V.H.3-2  
Proposed Project Wastewater Generation on Event Days**

<b>Development</b>	<b>Size</b>	<b>Generation Rate<sup>a, b</sup></b>	<b>Total Generation (gpd)</b>
Coliseum Seats	74,000 seats	4 (gallons/seat/day)	296,000
Luxury Suites <sup>c</sup>	4,000 seats	18 (gallons/seat/day)	72,000
Ancillary Office/Retail	40,000 sf	150 (gallons/1,000 sf/day)	6,000
<b>Proposed Project Wastewater Generation on Event Days</b>			<b>374,000</b>
<b>Less Existing Wastewater Generation on Event Days</b>			<b>370,000</b>
<b>Total Project Net Increase on Event Days<sup>d</sup></b>			<b>20,000</b>
<b>Proposed Project Wastewater Generation per Year</b>			<b>17,940,000</b>
<sup>a</sup> City of Los Angeles Department of Public Works, Bureau of Sanitation, July 29, 2003.			
<sup>b</sup> Gallons per day are for event days only.			
<sup>c</sup> The Proposed Project includes approx. 200 suites for a total of 4,000 seats.			
<sup>d</sup> Includes wastewater generation by ancillary structures, as illustrated in Table V.H.3-3.			

insignificant daily contribution to the HTP's daily capacity and an event-day contribution of approximately 0.38 percent of the remaining daily capacity at the facility. This 0.38 percent increase is expected to occur on approximately 46 days per year and is not considered a significant impact to the HTP's capacity or infrastructure.

## CUMULATIVE IMPACTS

As shown in Table V.H.3-4, related projects in the vicinity of the Project Site are estimated to generate approximately 896,202 gallons of sewage per day, or approximately 327 million gallons per year. Related project sewage generation would account for less than 0.2 percent of the maximum daily sewage flow currently allowed by the HTS system. The Proposed Project and related projects are estimated to generate a total of approximately 1.3 million gallons of sewage on event days at the Coliseum, or approximately 354 million gallons of wastewater per year (based on 365 days of related project and ancillary structure generation and 46 events per year of stadium generation). On event days, sewage generated by the proposed and related projects would account for approximately 1.3 percent of the remaining daily sewage capacity currently available at the HTP. On non-event days, related projects and the museum and retail uses would contribute approximately 0.9 percent of the remaining daily capacity at the HTP. Those related projects not yet under construction would be subject to interim and future ordinances which restrict the issuance of building permits based upon the availability of allotted monthly sewer capacity. The extent of each project's impact will depend on the availability of allotted sewer capacity at the time each project application is considered by the City.

**Table V.H.3-3  
Proposed Project Wastewater Generation on Non-Event Days**

<b>Development</b>	<b>Size</b>	<b>Generation Rate<sup>a</sup></b>	<b>Total Generation (gpd)</b>
Ancillary Office/Retail	40,000 sf	150 (gallons/1,000 sf/day)	6,000
<b>Proposed Project Wastewater Generation on Non-Event Days</b>			<b>6,000</b>
<b>Proposed Project Wastewater Generation on per Year</b>			<b>2,190,000</b>
<sup>a</sup> City of Los Angeles Department of Public Works, Bureau of Sanitation, July 29, 2003.			

**Table V.H.3-4  
Estimated Wastewater Generation by Related Projects**

<b>Land Use</b>	<b>Size</b>	<b>Consumption Rate (gpd)<sup>a</sup></b>	<b>Total (gpd)</b>
Apartment	179 du	160/du	32,041
Community Facility/Clinic	78,840 sf	250/1,000 sf	19,710
Elementary/Junior High School	6,062 students	8/student	48,496
High School	6,954 students	12/student	83,448
Light Industrial	700 employees	12/employee	8,400
Market/Grocery	8,720 sf	80/1,000 sf	698
Multi-Use Development	6,914,165 sf	80/1,000 sf	553,133
Museum	1,128,000 sf	20/1,000 sf	22,560
Office	447,500 sf	150/1,000 sf	67,125
Parking Facility	2,400 spaces	--	0
Restaurant	17,443 sf	300/1,000sf	5,233
Retail	107,370 sf	80/1,000 sf	8,590
Storage	7,910 sf	20/1,000 sf	158
Theater <sup>b</sup>	1,670 seats	4/seat	6,680
University <sup>c</sup>	440,000 sf	80/1,000 sf	35,200
Wholesale Trade Space	215,000 sf	20/1,000 sf	4,730
Subtotal			896,202
<b>Stadium</b>			<b>384,000</b>
<b>Ancillary Museum and Retail</b>			<b>6,000</b>
<b>Cumulative Total</b>			<b>1,286,202</b>
<sup>a</sup> Based on 120% of wastewater generation rates provided by the City of Los Angeles Public Works Bureau of Engineering, March 2002.			
<sup>b</sup> Used Pacific Theaters Seat Rate (1 seat= 20 sf).			
<sup>c</sup> Based on rates for Library/Public Area provided by the City of Los Angeles Public Works Bureau of Engineering, March 2002.			
<sup>d</sup> Event days only.			
Notes:			
du = dwelling unit			
sf = square feet			
Source: Christopher A. Joseph & Associates, 2002.			

## **MITIGATION MEASURES**

Project impacts to sewer services will be less than significant; therefore no mitigation measures are required.