2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed project is in the City of Los Angeles (Figure 2.1-1, Regional Project Location Map) in the communities of Venice and Playa Del Rey (see Figure 2.1-2, Project Vicinity). The project originates from the VPP, located on Hurricane Street and the westerly bank of the Grand Canal and the northerly bank of the Ballona Lagoon in the community of Venice, and extends southerly under both the Grand Canal and Ballona Creek, and ends in Vista Del Mar approximately 240 feet south of Waterview Street. The project site can be accessed via Imperial Highway and Vista Del Mar on the south, and from Pacific Coast Highway (SR-1)/Lincoln Boulevard and Washington Boulevard on the north (see Figure 2.1-1).

2.2 PROJECT OBJECTIVES

The City of Los Angeles is proposing to construct and operate a new force main sewer extending from the existing VPP at 140 Hurricane Street in the community of Venice to a junction structure on the Coastal Interceptor Sewer in the community of Playa Del Rey on Vista Del Mar near Waterview Street. The VPP’s existing 48-inch-diameter force main sewer, built in 1958, is a force main (pressurized pipeline) that currently conveys the plant’s wastewater flows to the Hyperion Treatment Plant. Figure 2.2-1 shows the Project location.

Currently, the existing force main sewer can handle only about 60 percent of the flows that could otherwise run through the VPP when all five of its pumps are running at full capacity. When flows into the VPP exceed flows out of the plant, wastewater will overflow directly into Ballona Lagoon. During heavy storms, such as those that occurred during the winters of 1994-95 and 2004-05, the excess wastewater at the plant came within minutes of overflowing into Ballona Lagoon.

The project’s intent is to construct a second force main sewer to be used in tandem with the existing force main sewer for the purpose of fulfilling the three key objectives described below. The following describes each of the City’s objectives, purposes and needs for the proposed new 54-inch sewage conveyance line.

SEWAGE CONVEYANCE CAPACITY

The VPP is the largest pumping plant in the City of Los Angeles. It collects sewage from the coastal areas of the City through an existing 48-inch pipeline and transports it to the Hyperion Treatment Plant in Playa Del Rey (see Figure 2.2-1). Over the years, the existing pipeline that conveys sewage to the treatment plant has gradually approached maximum capacity placing substantial strain on the system forcing the water level in the wet-well of the VPP basement to rise.

The City of Los Angeles first identified the need for additional sewer capacity during the heavy storms of 1995 when sewage and infiltrated stormwater in the sewer system exceeded the capacity of the existing 48-inch line, creating a potentially serious human and environmental health risk. Although the pumping plant had all five pumps running during peak rainfall, the existing downstream sewer force main that runs along the beach could only handle approximately 60 percent of the flows that would otherwise run through the pumps - serving as a bottleneck in the system. The amount of sewage and infiltrated stormwater in the sewer system exceeded its capacity, forcing the water level in the wet-well of the VPP to rise. In an effort to prevent potential sewage spillage as a result of an overload situation, the City proposes to install an additional 54-inch pipeline to convey the flows.
**PIPELINE REDUNDANCY**

In addition to the need to provide pipeline capacity to manage peak flows, the new 54-inch force main would be used in tandem with the existing force main; together, the two force mains would provide the necessary capacity to meet current and future peak wet weather flow demands. The project’s intent is to construct a second force main to be used in tandem with the existing force main for the purpose of fulfilling two objectives: expand the capacity of the Coastal Interceptor Sewer’s force main segment from the VPP to a connection in Playa Del Rey in the vicinity of Waterview Street, such that all projected wet weather flows can be safely conveyed without future threats of spilling onto city streets and adjacent surface waters; and to provide force main redundancy to allow for maintenance and rehabilitation of the existing force main and future reciprocal cleaning of each force main during dry weather periods.

**INABILITY TO PERFORM MAINTENANCE**

The existing 48-inch pipeline was built in 1958 and has been in continuous operation since then. The installation of the proposed 54-inch force main will provide bypassing capability allowing repair and maintenance of the existing pipeline, which is currently not possible.

### 2.3 PROJECT DESCRIPTION

The City of Los Angeles is proposing to construct and install a new 54-inch diameter force main sewer extending from the VPP to a junction structure at the North Outfall Sewer under Vista Del Mar, approximately 240 feet south of Waterview Street in Playa Del Rey. The existing VPP force main is a pressurized pipeline that conveys wastewater flows to the Hyperion Treatment Plant located in Playa Del Rey.

The potential impacts resulting from the Project are construction related; no aspect of its operation applies to the Project. Therefore, the critical aspects of the Project address the spatial extent of construction, the equipment and activity associated with it, and the duration of the activities from the start of construction until Project completion.

Relevant aspects of construction associated with this project are as follows:

**MICRO-TUNNELING (BORING) AND CUT-AND-COVER CONSTRUCTION**

Boring would include excavation at the starting and ending points of the under-channel and under-canal sections of the alignments. The starting point is referred to as the “launch shaft,” while the endpoint is referred to as the “receptor shaft.” There are two launching shaft alternatives for under-channel boring, located at the northerly end of the Playa Del Rey Alignment Alternative, on the south side of the Marina Del Rey entrance channel, along the northeast side of the Pacific Avenue fishing bridge. Also, there are three alternative receptor shaft sites on the north side of the entrance channel. One would be in the parking lot northwest side of the corner where Via Marina turns 90 degrees to the southwest, one to the west of Via Marina located on the north side of the channel, and the other would be at the southeast end of Pacific Avenue.
PUSH SITE EQUIPMENT

The major elements of push site construction for the Project would be:

- Jacking pit [from which the hydraulic jacks push pipes through the ground behind a remotely operated Tunnel Boring Machine (TBM)];
- Remote control cabin for operating the TBM;
- Crane;
- Support facilities (generator, power pack, and bentonite lubrication unit);
- Slurry separation equipment and tanks;
- Construction/Laydown area, 10 – 12,000 square feet in area, for pipe and other equipment storage and staging;
- Truck traffic to and from the pit for transporting tunnel muck, pipe sections and tunneling equipment (There would be eight truck round trips per day for muck removal and material supply.);
- Construction crew (There would be 17 construction crew on site and 17 passenger-car round trips daily.);
- Nighttime construction and lighting (It may be required to proceed continuously at the end of long drives through sticky soils to prevent the pipe from getting stuck short of the receiving site. In such cases, nighttime construction would be required. It is assumed that there would be a need for lighting at the push site throughout the night, on occasion.); and
- Acoustic curtain (sound barrier) (To minimize the transmission of noise, it is proposed that a 20- to 30-foot-tall acoustic curtain be installed around the site. This curtain would shield from view all equipment around the push site, except for the crane.).

LAUNCH SITE CONSTRUCTION DURATION

The launch sites would require about 2 months to complete and must be constructed prior to the start of boring under the entrance channel and the Grand Canal. The under-channel tunnel is approximately 1,800 feet long and boring rates range from 30 - 50 feet per 8-hour shift. A conservative estimate allows for no nighttime work however, the mined tunnel method of construction would require continuous boring until the tunnel is completed. In areas where the cut and cover, and short range micro tunneling (boring) method of construction is used, is assumed that there would be one shift per day. Under this assumption, short range boring could require from 36 to 60 days (about 1 to 2 months). Cumulatively, push site construction and boring would take up to 4 months and would be considered to be “temporary.” Even if tunnel boring were to be sequential to cut-and-cover construction activities (see below), the cumulative total construction time would be less than 1 year and would also be considered to be temporary. However, it is assumed that boring and trench construction would be concurrent.

For under-canal boring, the rate of advance would be the same as for under-channel boring. The tunnel length would range from about 100 to 500 feet, depending on which of the alternative launch sites are used for the shafts. Tunneling could require from 10 to 16 days for the longer route, or 3 to 4 days for the shorter route. It is assumed that there would be no nighttime construction.

RECEPTOR SITE EQUIPMENT

Construction activity at the receptor sites would occur during two periods: the initial construction of the shaft, and then, later, when the TBM is extracted from the tunnel and the pipeline is connected at the receptor sites.
The major equipment that would be utilized at the receptor shaft sites would be:

- Crane;
- Jacking equipment;
- Construction/Laydown area (about 5,000 square feet in area for pipe and other equipment storage and staging);
- Truck traffic to and from the pit for transporting tunnel muck (Pipe sections and tunneling equipment are estimated to be approximately 15 truck round trips per day for muck removal and material supply.);
- Construction crew (There would be 25 construction crew on site daily.); and
- Acoustic curtain (To minimize the transmission of noise, it is proposed that a 20- to 30-foot-tall acoustic curtain be installed around the site. This curtain would shield from view all equipment around the receptor site, except for the crane, which will extend beyond the top of the curtain.).

**Receptor Shaft Site Duration**

Construction of the receptor shafts would require about 6 weeks each to complete. Then all activity at the sites would cease until under-channel tunnel boring reaches them. At that point, the TBM would be extracted from the receptor shaft and the pipeline would be tied in with either the cut-and-cover alignment. It is estimated that the extraction and tie-in activities would require about 1 week. The receptor shaft site in the vacant lot opposite to the VPP would require 6 weeks to complete, then would lie dormant until under-canal tunnel boring reached the site. One week would be required for TBM extraction and tying the pipeline in with the VPP.

**Cut-and-Cover Construction Site Equipment**

Cut-and-cover construction is a common method of linear pipeline construction that involves an open trench and sequential activities. The trench would be excavated and then shored up with sheet piles that would be installed 200 to 300 feet ahead of the pipeline crew. Construction involves excavation, the pouring of a concrete foundation, backfilling with a bed of gravel, pipeline installation, backfill and compaction, restoration of curbs and utilities, and re-paving the affected road. Figure 2.3-1 shows one example of a typical array of equipment used in cut-and-cover construction along a public street.

The major visible elements of the cut-and-cover sites would be:

- Concrete saw;
- Pavement breaker;
- Pile driver;
- Excavator;
- Rubber tire loader;
- Cranes (2);
- Backhoe loader/compactor;
- Generator/compressor;
- Soil compactor;
- Asphalt paver;
- Sweeper;
- Water truck;
- Supply truck;
- Haul/dump truck;
- Minimum of 17 to 28 workers on site daily;
- A moving construction/laydown area along 1,000-foot stretches of the alignment; and
- A construction/laydown area next to push and receptor site construction activities.
Figure 2.3-1

Clockwise from Top: Construction Equipment for Typical Cut-and-Cover Construction, Sound Barriers, Seen from Street and from within Shaft Construction Area. Shaft, within Sound Barrier.
CUT-AND-COVER CONSTRUCTION DURATION

Given the proposed cut-and-cover construction sequence, within 12 weeks, approximately 1,800 feet of pipeline installation can be completed to the point that the affected road is returned to its pre-construction state (paved). Given the rate of construction, the duration of construction for the alignment alternatives north of the Marina Del Rey entrance channel would be approximately 7 months, and the alignment south of the entrance channel (Pacific Avenue/Vista Del Mar) would be the same duration. It is assumed that cut-and-cover construction north and south of the entrance channel would occur concurrently. The construction and operation of the launch and receptor sites would be concurrent with the cut-and-cover construction.

LARGE-DIAMETER (MINED) TUNNELING CONSTRUCTION

There are four alternative alignments for mined-tunneling construction; mined tunneling involves a launch shaft and an extraction shaft. The launch shaft would be located on Los Angeles International Airport (LAX) property about 300 feet northeast of Vista Del Mar and as close as 220 feet south of Napoleon Street. There are two alternative extraction sites, one on Dockweiler Beach at the southwest end of Hurricane Street, and the other at the northeast end of Hurricane Street in a vacant lot directly across from the VPP. Mined tunneling uses manned TBM's along a continuous alignment that may be of any length, so this construction alternative would require just the launch shaft and one extraction shaft. Additionally, two 3-foot-diameter escape shafts would be needed, one north and one south of the Marina Del Rey entrance channel, with construction requiring up to approximately 3 to 5 days.

STARTER SHAFT EQUIPMENT

The major equipment for the starter shaft sites would be:

- 30-foot-diameter starter shaft;
- One 160-ton crane to lift/set the TBM and hoist muck cars;
- One 35-ton RT crane to handle segments and load segment cars;
- Office facilities, change houses;
- Cut-and-cover equipment (see above) for open trench construction;
- Support facilities (generator for pumps, electrical substation);
- Construction/Laydown area (12,000 square feet in area for storage of tunnel liner and carrier pipe segments throughout the duration of the tunneling);
- Truck traffic to and from the pit for transporting tunnel muck, pipe sections and tunneling equipment (There would be 15 truck round trips per mining shift.);
- Construction crew (There would be a 20 to 25-person construction crew on site and 20 to 25 passenger-car round trips daily.);
- Lighting may be required for security of the construction site and nighttime construction for mined tunneling; and
- Acoustic curtain (To minimize the transmission of noise, it is proposed that a 20- to 30-foot-tall acoustic curtain be installed around the site. This curtain would shield from view all equipment around the extraction site, except for the crane.).
STARTER SHAFT CONSTRUCTION DURATION
The starter shaft would require approximately 7 months to construct and the tunnel portion of construction would last from 27 to 28 months.

EXTRACTION SITE EQUIPMENT
The major visible elements of the starter sites would differ depending on the phase involved. The first phase is the construction of the shaft, and the second phase is the removal of the TBM and construction of the tie-in with the pipeline that would be installed along Hurricane Street. For construction of the shaft, the following equipment would be needed:

- 20-foot-diameter extraction shaft;
- Crane;
- Jacking equipment;
- Cut-and-cover equipment (see above) for open trench construction;
- Support facilities (generator for pumps, electrical substation);
- Construction/Laydown area (5,000 square feet in area);
- Truck traffic to and from the pit for transporting tunnel muck, pipe sections and tunneling equipment;
- Construction crew;
- Lighting may be required for security of the construction site; and
- Acoustic curtain (To minimize the transmission of noise, it is proposed that a 20- to 30-foot-tall acoustic curtain be installed around the site. This curtain would shield from view all equipment around the extraction site, except for the crane.).

EXTRACTION SHAFT AND CUT-AND-COVER CONSTRUCTION DURATION
The extraction shaft would require approximately 10 weeks to construct and about 1 week for TBM removal after tunnel excavation has been completed. The cut-and-cover construction that is part of the mined-tunnel construction alternative is expected to occur concurrently with tunnel construction.

2.3.1 Project Alternatives
The City’s objectives can be achieved by using one of several alternatives described in Section 6.0 of this EIR.

A preferred alternative for the project has not been determined at this time. Equal analysis has been given to each alternative associated with the Project, allowing for a decision to be made in accordance with CEQA Guidelines, which states that sufficient information must be provided to allow meaningful evaluation, analysis, and comparison of the proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative are provided in Section 8.0 of this document, which may be used by decision-makers to make comparisons and ultimately choose a preferred alternative alignment for the VPP dual force main sewer.

Based upon the analysis conducted for the alternatives addressed in this EIR, the cut-and-cover method of construction for two of the proposed alignments were deemed not viable; therefore, a detailed impacts analysis is not provided for them. These two proposed alignments are the beachfront alignments on the
north, and south sides of the Via Marina/Ballona Lagoon channels. The deep-mined tunneling method of construction along the beachfront, however, has been analyzed for this project.

Unless otherwise stated, it is assumed that the Project, regardless of the alignment selected or the construction method used, will be designed, constructed and operated following all applicable laws, regulations, ordinances and other formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Also, the analysis provided in this EIR assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adopted by the City of Los Angeles [e.g., City of Los Angeles' Department of Public Works Additions and Amendments to the Standard Specifications For Public Works Construction (“The Brown Book”).]