

SECTION 7.0

# Water Supply Pipelines

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## 7.1 Introduction

This section describes the water supply pipeline route for the recycled and domestic water lines. The source of the water, its quality, and potential environmental impacts are discussed in Subsection 8.14, Water Resources.

Subsection 7.2 discusses the process water supply pipeline. Subsection 7.3 discusses the potable water line for potable supply, fire protection, and emergency supply. Subsection 7.4 discusses the pipeline construction practices.

## 7.2 Process Supply Pipeline

### 7.2.1 Process Water Supply

To provide a source of process water for the water treatment plant at the San Francisco Electric Reliability Project (SFERP) site, the City of San Francisco's (City's) combined sewer system will be intercepted at a collection station near Marin Street. A new underground pump station will be constructed on a City-owned parcel located on Marin Street. The pump station will include infrastructure to remove floatable matter and large debris prior to discharge into the process water pipeline. Excess flow and debris will be returned to the combined sewer system.

### 7.2.2 Pipeline Alignment

The initial reach of the pipeline will be constructed along Marin Street. It will extend approximately 80 feet, and will be installed using open trench excavation methods. The next portion of the alignment extends north from Marin Street along Mississippi Street for about 480 feet, and then east on Cesar Chavez Street for about 850 feet. This reach of the process water pipeline will be constructed within an existing collection box, which is part of the storage/transport system that captures stormwater runoff. At locations where there is insufficient room within the collection box, the pipeline will be constructed through open-trenching or a trenchless method, such as jack and bore or micro-tunneling. The existing collection box terminates near the intersection of Cesar Chavez Street and Indiana Street. The next and final portion of the pipeline will run about 2,340 feet east on Cesar Chavez Street, then 290 feet north on Maryland Street and then 200 feet west to the SFERP water treatment facility inlet structure, located on the southern boundary of the project site. This third portion of the pipeline will be installed using open trench excavation methods, or trenchless methods, where necessary.

The pipelines may have to be installed across Third Street and Illinois Street using trenchless methods, due to traffic concerns and many existing utility crossings. In Cesar Chavez and Maryland Streets, the pipeline will be located to avoid all known utilities. Along Cesar

Chavez Street, the alignment will stay on the south side to avoid water lines and other utilities located on the north side of the street.

## 7.3 Potable Water Pipeline

Potable water will be supplied to SFERP to meet minor potable water needs, fire protection demands, and emergency cooling and process backup supplies, as described in Subsection 8.14, Water Resources. The potable water source is the City's potable water distribution system, which provides a blend of Hetch Hetchy water from a protected watershed in the Yosemite National Park and the local area watershed water in San Mateo. An existing potable water pipeline of sufficient capacity is located in 25th Street, which will require the installation of approximately 300 feet of pipeline to supply water to the SFERP.

## 7.4 Construction Practices

Construction of the process water supply pipeline is expected to occur during months 4 through 7 of project construction. Total construction time is expected to be approximately 4 months.

The water pipelines will be constructed with one crew ("spread") working continuously along the pipeline right-of-way (ROW), performing pipe installation in the storage/transport and in open trenches. In addition, a second crew will perform microtunneling operations at the necessary locations. Workers will park along the pipeline corridor or at designated parking areas and be transported to the work site. The pipeline corridor will be accessed from existing roads. Most major pieces of construction equipment may remain along the alignment over the course of construction. Piping will be stored in the plant laydown areas or along the pipeline ROW. Construction will be undertaken in accordance with an environmental mitigation plan prepared for the project.

The construction of the wastewater pipelines will consist of the following activities:

- **Trenching**—It is expected that the pipeline can be installed in a relatively shallow trench, with a total excavation depth of approximately 7 feet. The width would be approximately 5 feet with allowance for clearance on both sides of the pipe and trench shoring and sheeting. Trench width will depend on the type of soils encountered and slope required by OSHA regulations. Trench depth will be sufficient to meet the requirements of the codes and agency having jurisdiction. Moreover, the pipeline will be buried to provide a minimum cover of 3 feet.
- **Jack and Bore/Microtunneling**—Jack and bore or microtunneling will be used at locations within the open-cut trench alignment reaches where there are facilities such as large box culverts without adequate clearance above, or to cross the future light rail tracks. Both of these methods will require a jacking pit and a receiving pit. The jacking pit would need to be approximately 30 feet long and 15 feet wide. At these crossings, a casing pipe would be installed by jack and bore or microtunneling. The pipes and any conduits for fiber optic cables will be bundled together with spacers and skids and then pushed into the empty casing. The excess material from this operation may be

contaminated and will be hauled to an appropriate area for disposal. The use of the jack and bore or microtunneling method will be dependent on the subsurface conditions.

- **Installation in the Collection Box** – The second portion of the pipeline will be installed and encased in concrete within the existing collection box and above the existing concrete-encased sewer lines. The installation within the collection box requires safety procedures specific to work within confined space. Prior to actual work within the structure, locations for discharge need to be identified. Temporary barriers at all inlets will be constructed to prevent flow into the structure during work. Prior to work within the structure, it will be pressure washed and ventilated, and proper lighting will be installed. Access holes will be cut into the top of the collection box near bends in the alignment so equipment and materials can be lowered into it. At each of these locations, temporary stairs will be placed for construction worker access.
- **Open-Trench Installation** – Installation of the water pipelines will consist of lowering the pipe string into the trench.
- **Stringing** – Stringing will consist of trucking lengths of pipe to the alignment corridor and laying them on wooden skids beside the open trench.
- **Backfilling** – It is anticipated that the excavated material will have unsuitable engineering properties to be used for backfill, and will therefore be hauled to an appropriate area for disposal. The trench may be backfilled with imported granular material or a flowable material such as controlled low strength material (CLSM). If CSLM were used, the trench could be narrowed to approximately 4 feet in width because of the backfilling characteristic of CSLM. Backfilling will consist of placing the selected fill material into the trench around and on top of the pipe, ensuring that the surface is returned to its original grade or level. The backfill will be compacted to protect the stability of the pipe and to minimize subsequent subsidence.
- **Plating** – Plating will consist of covering any open trench in areas of foot or vehicle traffic at the end of a workday. Plywood plates will be used in areas of foot traffic and steel plates will be used in areas of vehicle traffic to ensure public safety. Plates will be removed at the start of each workday. Efforts will be made to minimize the length of open trench along the alignment.
- **Hydrostatic Testing** – Hydrostatic testing will consist of filling the pipeline with water, venting all air, increasing the pressure to the specified code requirements, and holding the pressure for a period of time. After hydrostatic testing, the test water will be analyzed for pH and total dissolved solids (TDS) and discharged to the City’s combined sewer system, unless the analysis shows that the water’s pH and TDS exceeds the City’s discharge criteria. In this case the water would be trucked to an appropriate disposal facility. Temporary approvals for test water use and discharge will be obtained, as required by the construction contractor.
- **Cleanup** – Cleanup will consist of restoring the surface of the backfilled trench by removing any construction debris, grading to the original grade and contour, and revegetating and repairing where required.

- **Safety** – A construction safety plan will be prepared for the project. This plan will address specific safety issues, such as working in an active railroad ROW, traffic control, working along traveled City or County streets, and other areas as required by permits.