



Did staff look at alternative pipeline pathways that could ease community concerns?

Numerous potential alignments were evaluated for the pipelines. The City looked at multiple ways to get from the Morena Pump Station to the North City Water Reclamation Plant. Alignments were evaluated using factors including utility conflicts, easement and property acquisition, operational complexity, energy demand, schedule, risks, construction feasibility, and community and environmental impacts. The proposed route was determined in consideration of these factors. Maps of numerous alignments that were evaluated can be found in Chapter 3 of the EIR.

The City has established policies that prohibit new wastewater force mains in canyons and other environmentally sensitive lands. Some of the alternative routes considered would also conflict with the City's Sewer Design Guide that encourages construction of sewer utilities within roadway right-of-way.

What is being done to address the concerns of foul odors near resident homes? Won't valves and water hammering cause noxious air at intersections?

High Purity Oxygen will be injected into the wastewater force main prior to transport to prevent a septic condition from developing within the pipeline. Odorous conditions are attributable to septic conditions. In addition to the High Purity Oxygen injection, there will be carbon filters installed at all air vacuum valves along the pipeline alignment.

The High Purity Oxygen and carbon filters are effective measures to eliminate potential noxious odors.

What efforts are being taken to minimize the impacts to residential streets and traffic?

There are a number of ways the project has been designed to minimize impacts to streets and traffic. Traffic impacts will be minimized through scheduling work during nighttime hours and through the preparation of a Transportation Demand Management Plan.

The installation of the segments of the pipeline will progress along the alignment; construction will be done in stages to limit the amount of open trenching occurring at once.

The pipeline has been designed to minimize utility relocations which would impact a greater area. During construction no full road closures are proposed. Lanes of travel will be open at all times during pipeline construction.

The Morena pipeline and brine line are co-located along the same alignment to avoid impacts associated with two separate pipeline alignments. Originally the Morena pipeline alignment was planned as one construction package. Currently the package is being split into three; this will allow the contractor to focus on a smaller number of communities to better understand their concerns during the construction phase. The Construction Management (CM) team will begin constructability reviews shortly, which include sequence of work, site logistics, and validation of the proposed project schedule and estimated durations of work along the alignment.

Additionally, PUD has established community working groups along the pipeline alignment to share information regarding the constructability review and allow for input from the community working group. Because this is such a large project, it will be the CM's role to coordinate with all construction related activities for the durations of the Project. There will be a dedicated outreach team to help facilitate working group meetings for communities along the pipeline alignment.

What are the main construction methods for the pipelines and what is the pipe material?

The main construction method for the pipelines will be open cut construction with three locations of tunnels (San Clemente Canyon, Rose Canyon and Interstate 805). Open cut construction will include excavating a trench to the required depth, placement of pipe bedding below and around the proposed pipes, backfill and compaction and restoration of the pavement within the trench.

After segments are completed, an asphalt overlay or seal coat of the street will occur, with replacement of existing striping. Tunneling will include the construction of a launch and receive shaft where equipment and material will be inserted to complete the tunnel. All pipes will be located within a steel casing pipe and will be grout filled.

The proposed wastewater force main will be constructed of a minimum ¾-inch thick welded steel pipe with a 1-inch thick cement mortar lining. The pipe will be tape wrapped with polyurethane and supplied with a rock mortar shield to protect against corrosion.

The proposed brine line will have two segments, one mimicking the welded steel pipe of the wastewater force main, and the second in the low pressure zone of the pipeline, will be constructed with high density polyethylene (HDPE) with a minimum thickness of three inches.

How will the Morena Pump Station operate?

The Morena Pump Station will divert a portion of the existing flows from several regional trunk pipeline systems that include the Mission Valley Interceptor, the Morena Boulevard Trunk, and the East Mission Bay Trunk. Overall the three trunk systems produce approximately 45 million gallons per day which currently flow directly to the Point Loma Wastewater Treatment Plant. Upon completion of the Morena Pump Station, approximately 32 million gallons per day will be diverted from the three trunk pipelines and pumped to the North City Water Reclamation Plant, located at the intersection of Miramar Road and I-805.

The Morena Pump Station will include three automated diversion structures that provide flows directly to the pump station, which uses four high volume pumps to convey flows into the pipeline. At that point, the pump station pre-treats the inflow to remove debris through a screening process, and injects pure oxygen into the flows to control odors. The pump station is operated in concert with the demands and treatment process located at the North City Water Reclamation Plant.

What are the operating pressures in the pipelines?

The wastewater force main operating pressure will be between 54 and 216 pounds per square inch (psi). The operating pressure differs depending on location and flow rate. In all areas, the operating pressures along the pipeline are well below the ultimate pressure capacity of the pipeline of 530 psi. All the pipelines have been designed in accordance with the American Water Works Association requirement factor of safety of 2.00.

What would happen if the pipeline ruptured due to an earthquake or another cause?

All of the sewer force main is constructed of steel, which is considered a flexible pipeline material. In addition, all of the pipeline joints are fully welded, forming a continuous pipeline with no joints posing a threat of separation. Specifically, during an earthquake event, the pipeline would flex along with the ground motion. If there was an earthquake large enough to cause a displacement of the surrounding earth, it is expected that the pipeline would buckle without rupture. In the unlikely event that the pipeline did rupture for some reason, the Morena Pump Station pressure and flow monitoring system would sense an out of range operating condition and automatically shut down the pumping and diversion systems, minimizing a spill.

How quickly can the pipeline be evacuated and emptied?

The wastewater force main is designed with several blow-off structures that are used to drain the pipeline. All of the blow-off structures are directly connected to the local sanitary sewer system and therefore all drainage waters will be directed to an existing sewer without a surface spill. In the event that the local sewer system is inoperable, the pipeline would be drained to container truck/trailers and hauled directly to a water reclamation plant.

What is the minimum depth of the pipes for the Morena pipelines? Wouldn't it help to "sleeve" the pipelines in a nine foot concrete pipe?

The minimum depth of the pipes is six feet. sleeving is not necessary due to the design and construction methods of the pipelines.

Is the City responsible for remediating contaminated soil if encountered around the gas stations?

During the course of construction projects in the public right-of-way, potentially contaminated soil and groundwater may be encountered. If encountered, the City is responsible to properly manage the potentially contaminated soil and groundwater within the active construction area. The City has no regulatory responsibility nor is required to further investigate or remove contaminated soil and groundwater beyond the limits of the active construction area.

Closure letters issued to the responsible parties by the regulatory body require "Any contaminated soil encountered or excavated as part of future subsurface construction/utility work must be managed in accordance with all applicable legal and regulatory requirements."

The City takes a proactive approach to identify responsible parties who likely have caused soil or groundwater contamination within right-of-way construction areas, and pursues agreements for the responsible parties to manage the contaminated soil and groundwater themselves, or reimburse the City for costs to properly manage their wastes.