



[Preparing for the Big One with Biggest Earthquake-Proof Trunk Line](#)

Construction Well Under Way on Major Water Pipeline Infrastructure Project in Northeast San Fernando Valley to Improve Water Reliability and Quality

By Albert Rodriguez
Communications, Media and Community Affairs

Over a century of faithfully delivering water and power requires major investment in replacing aging infrastructure to ensure reliability in light of evolving regulations, technology and the ever present threat of a natural disaster. That's why LADWP is currently constructing the Foothill Trunk Line Unit 3, considered the longest, large-diameter earthquake resistant pipeline project in the nation. Situated in the Pacoima and Sylmar area, this \$105 million project began construction in 2016 and is replacing a 1930s era, three-mile stretch of 24 to 36-inch pipeline along Foothill Boulevard.

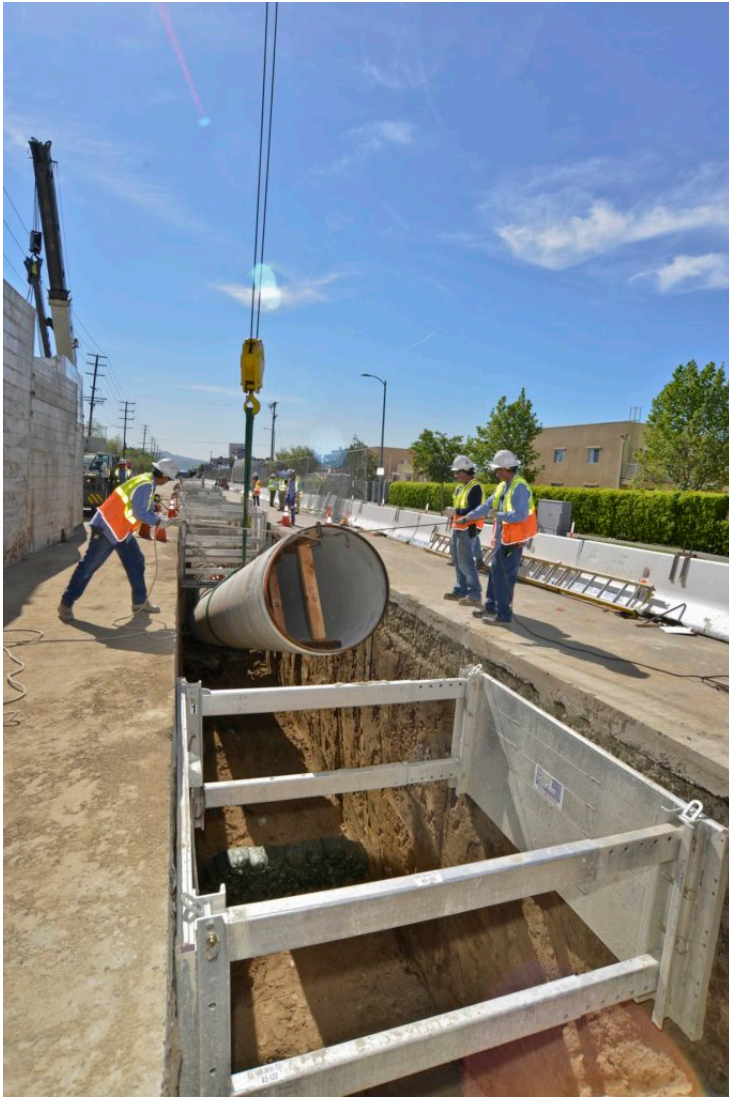


Photo by Art Mochizuki

Trunk lines are supply pipelines greater than 20 inches in diameter that comprise the major arteries of the city's important water delivery system. The trunk line along Foothill Boulevard transports water to the Sunland/Tujunga area of Los Angeles that spans a very significant and complex fault line that ruptured during the 1971 San Fernando Earthquake. By upgrading and increasing the size of the pipeline, this project will improve capacity, system flexibility and reliability in the event of another fault rupture.

Water Service Reliability

"The Foothill project is part of the Water System's 10-Year Capital Improvement Program to maintain or replace existing infrastructure and construct new facilities with the latest materials and technology," said Richard Harasick, LADWP Senior Assistant General Manager - Water System. "Thanks to funding provided by the rate changes enacted in 2016, the Foothill Trunk Line ensures that LADWP fulfills its mission to provide reliable, high quality water to our customers for decades to come."

The majority of the new revenues are earmarked for infrastructure improvements and water quality projects, including those required to meet water quality standards and for Owens Valley dust mitigation

measures. The remaining new revenues will go toward expanding the local water supply, which includes recycled water, stormwater capture, and groundwater remediation.



Flexing Iron

Construction on Foothill includes four miles of earthquake resistant ductile iron pipe (ERDIP) - two miles of 54-inch diameter transmission trunk line and two miles of 12-inch diameter ERDIP distribution line installed in parallel from Paxton Street to Hubbard Street. The ERDIP pipe used in the project is provided by the Kubota Corporation of Tokyo, Japan, which pioneered the technology. Kubota has been supplying earthquake resistant ductile iron pipes to construction projects for nearly 45 years. The patented pipe is segmented, much like a chain, able to accommodate seismic forces and movement by expanding, contracting and flexing to absorb ground movement without leaking or rupturing. It allows 1 percent axial movement in tension and compression and up to eight degrees of rotation.

Prior to the Foothill Trunk Line project, LADWP had implemented an earthquake pipe pilot project at five other locations throughout the city's vast water system. A total of 2.5 miles (13,600 feet) of ERDIP was installed in the East Valley, West Valley, Central, Western and Harbor areas of the city. One of those early projects was strategically installed near Northridge Hospital, taking into consideration its proximity to the 1994 Northridge Earthquake epicenter. The end goal is to install a total of 14 miles of earthquake resistant pipe by 2020 as part of a seismic resilient pipe network throughout the city.

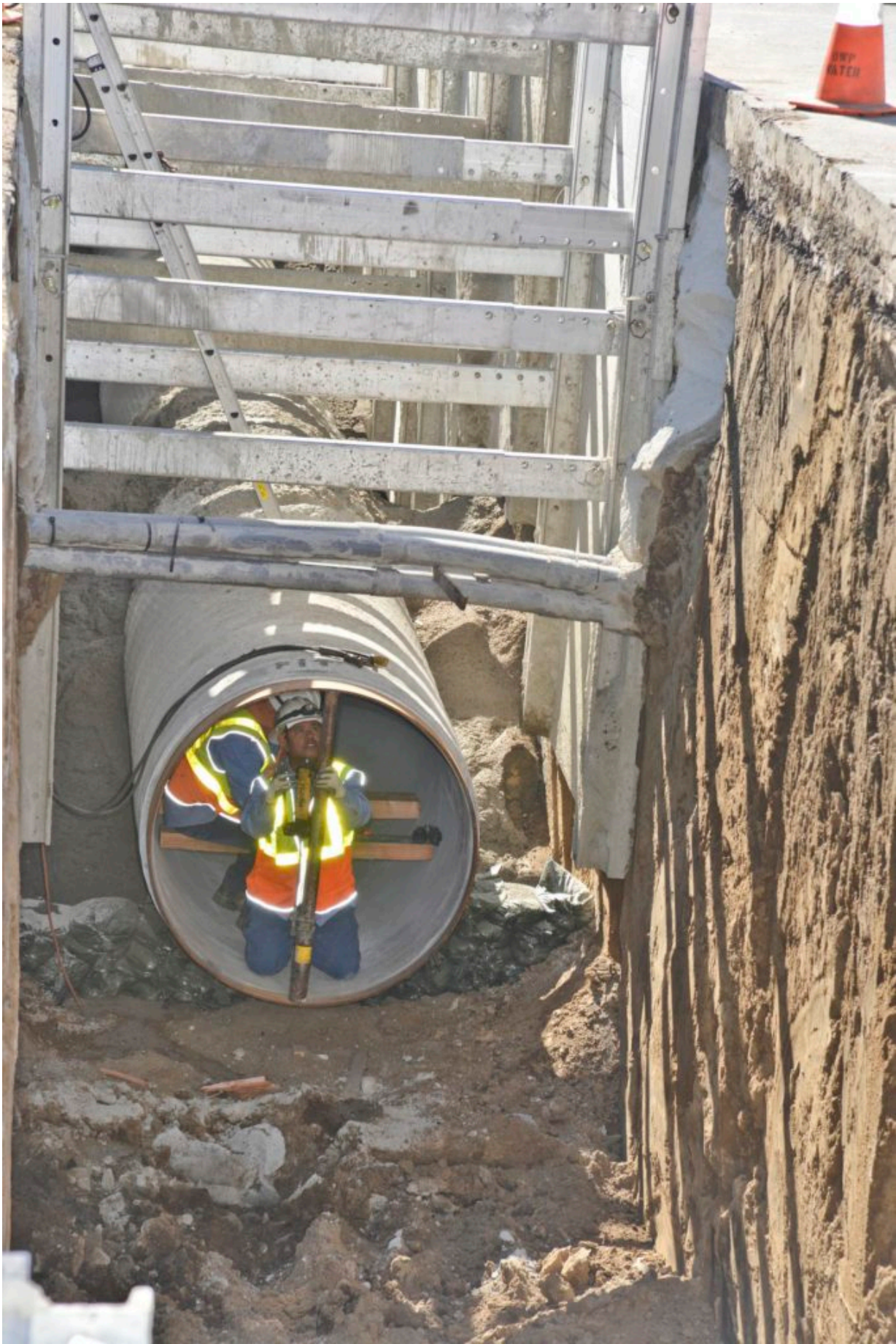


Photo by Art Mochizuki

Safety Best Practices

Construction on the Foothill project has presented many challenges that have been handled effectively and safely by our construction crews. The three-mile construction route begins on Terra Bella Street in Pacoima and continues northwest on Foothill Boulevard to Hubbard Street in Sylmar. Construction is divided into 19 distinct work areas. Each work area is approximately 700 to 1,200 feet in length and construction duration ranges between four and ten months. In order to ensure the safety of the public and construction crews, temporary lane reductions and parking restrictions near the work areas were required. A launching pit and receiving pit were placed on both sides of major intersections in order to install the pipe underground, allowing for the continuous flow of cross traffic at major intersecting streets. To minimize impacts to the community, a new 12-inch diameter distribution water mainline was installed alongside the 54-inch diameter pipeline in the same trench. The new mainline separated the water serving the local community from the new pipeline transporting large amounts of water to the Sunland/Tujunga area.

“We have carried out construction in carefully sequenced phases so as not to disrupt the many businesses lining the street,” said Clemente Valdovinos, civil engineering associate and construction engineer for the Foothill Trunk Line Unit 3 Project. “Our in-house Trunk Line Construction crew has been doing an incredible job, quickly learning and understanding the logistics of earthquake resistant ductile iron pipe installation while keeping the project on schedule.”

Open trench construction will continue through 2021, with tunneling is scheduled from 2020 through 2024. With approximately 500 miles of trunk lines in the water system, it’s no easy task balancing the long-term infrastructure needs of the Water System with the immediate needs of the community. With aging infrastructure and reliability challenges imminent, LADWP must and will take the necessary steps required in order to continue providing the best possible water service to our customers. The crews working on the Foothill Trunk Line today are laying the groundwork and modeling the best practices for successful future projects to come.

(Featured photo by Art Mochizuki)

Learn More

[Foothill Trunk Line Project](#)