



It's not everyday an HDD operator can say they worked in front of the Lincoln Memorial.

HDD ON DISPLAY

MIDWEST MOLE TACKLES WATER LINE PROJECT AT THE NATIONAL MALL

By Mike Kezdi

If you're one of the more than 25 million people who visit the National Mall & Memorial Parks in Washington, D.C., you can thank Midwest Mole and horizontal directional drilling (HDD) technology for your next sip of cool, refreshing water from a fountain or a faucet.

Midwest Mole, an Indianapolis-based trenchless contractor, was selected by the National Park Service (NPS) to complete the waterline upgrade in West Potomac Park. Started in January 2018, the \$4.9 million project provides a much-needed improvement to the aging and under-sized water distribution system in the park. Midwest Mole handled the installation of more than 17,000 lf of 2- to 12-in. high density polyethylene pipe (HDPE) via HDD.

Location, Location, Location

The new waterline replaces existing infrastructure that is 95 to 100 years old and is sized to provide adequate flows and pressures for future fire protection systems for all facilities in accordance with National Fire Protection Association standards.

According to information provided by the NPS, the project replaced several miles of water piping, backflow preventers and fire hydrants on the west end of the National Mall, from the west end of the National Mall, from the Washington Monument grounds to the Lincoln Memorial, and through West Potomac Park between the Jefferson Memorial and the Lincoln Memorial. The project also improves water distribution in all NPS facil-

ities in West Potomac Park south of Constitution Avenue and west of 14th Street.

Midwest Mole project engineer Liviu Ciocan says that although the crew did not have any major difficulties completing the project, the estimated 12-month completion deadline was extended to May 2019 because of the government shutdown and change orders to address new tie-ins due to poor as-built designs.

"This is the second stage of the project. The first stage was a mix of HDD and open cut and was farther away from the monument and visitor traffic," says Ciocan. "Here, they determined that less disturbance meant for decreased impact on all of the visitors and their experiences. It was the right decision because you could hardly see us working in the park, and to



Most of the underground obstructions that crews encountered were due to as-builts that did not document footers for barracks.

Midwest Mole's Tornado Global Hydrovac hydro excavator works to clean up drilling slurry in front of the Washington Monument.

my knowledge, no one complained about our presence.”

This is impressive and a testament to the less invasive nature of trenchless technologies considering crews – for the majority of the project – worked a 7 a.m. to 5 p.m. shift. Exceptions were made for critical tie-ins. One of those critical tie-ins required about a month of overnight work because the NPS did not want to close Jefferson Drive as it is a busy access road for the area.

Trenchless Toolbox

To complete the project Midwest Mole relied on its Vermeer D36x50DR Series II Navigator Drill equipped with a DigiTrak F5 locating system for the bores. The drilling fluid system was comprised of two Vermeer MX240 Mixing Systems and pipe fusion was handled with a McElroy Mfg. TracStar 500 Series 3 fusing system. Ancillary equipment included a Caterpillar 420E IT backhoe loader and a Kubota SVL 90-2 skid steer.

“While drilling we have mostly encountered silty clay. There were a lot of obstructions though, from lumber and old abandoned drains to concrete footers and rebar,” says Ciocan. “It seems the entire area used to be a swamp back in the day, and it was backfilled to the actual grade. In any case, a good combination of bore gel, platinum pack and soda ash proved adequate for these ground conditions.”

He adds that because the as-builts were unreliable, Midwest Mole hired a private locating company to survey the project area. Even with that added layer of investigation, the crews still hit footers for what appear to be old building foundations dating to before World War II.

“Locating these obstacles became a trial and error process, he says. “The crews had to excavate the area every time a drill bit would hit an obstruction.”

Even with these questionable as-builts, the Midwest Mole crew was able to complete the project without any major incidents and zero utility strikes.

For spoils and mud removal for the majority of the project, Midwest Mole used its own Tornado Global Hydrovac vac truck. Ciocan adds that, to handle the change order work at the end of the project, it hired Badger Daylighting for vac truck work since the Midwest Mole unit had returned to Indianapolis.

Congestion Concerns

Because of the heavy foot and vehicular traffic to this section of the Nation’s Capital, Midwest Mole staged from a central location between Independence Avenue SW and Maine Avenue SW near the Tidal Basin. It is here that Midwest Mole contained its drilling spoils in two, 10,000-gal roll-off containers. When full, a third-party hauling service handled disposal. Had Midwest Mole employed its own vac truck for disposal it would have been a two- to three-hour round trip.

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Midwest Mole replaced piping that was 95- to 100-years-old with HDPE. Pipes ranged from 2- to 12-in. in diameter.



While soil conditions, undocumented utilities and mud disposal are all common areas of concern on HDD projects, probably the biggest non-typical challenge was handling the traffic – for events big and small – around the National Mall. During particularly high-traffic events, like the Cherry Blossom Festival and the

4th of July, it took a bit longer to mobilize to the sites and the Midwest Mole had to be prepared to answer the occasional question from passers-by.

“I think our guys handled this extraordinarily well and our foreman took the time to explain what was going on when people asked, ‘What are you doing in my

park?’” Ciocan says. “Communication between us, AECOM [construction manager] and the National Park Service was a critical factor. Because of this open line of communication, the project worked.”

Mike Kezdi is associate editor of *Trenchless Technology*



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