

Upcoming Projects

CALIFORNIA

Alameda County

New Irvington Tunnel

Constructing a tunnel parallel to the existing Irvington Tunnel, in Alameda County, Calif., will allow the San Francisco Public Utilities Commission to decommission the Irvington Tunnel for inspection and rehabilitation to improve the water delivery reliability. Located between the Calaveras and Hayward Fault Zones, the mixed-face tunnel is made up of inter-bedded layers of sandstone and shale, with several smaller fault zones. Adding more complications, the tunnel offers 700 ft of cover and high hydrostatic head with potential water inflows up to 1,000 gpm.

An 18,200-ft long excavation is proposed with the installation of a 10-ft inside diameter concrete liner. There will also be construction of a new access road to the Irvington Portal and a new portal within the piping manifold. Additional isolation valves and connections to the Bay Division Pipelines, originating from the Irvington Tunnel site, will also be installed. The total construction cost for the project is estimated at \$154 million. Bidding was extended until April 1 with contract award scheduled for late May and construction expected to begin in July. Final completion is expected by April 2014.

DISTRICT OF COLUMBIA

D.C. Water and Sewer Authority

CSO Tunnels

As part of a long-term plan to control combined sewer overflows, the D.C. Water and Sewer Authority is planning to construct a series of tunnels to capture excess flow and convey it to the Blue Plains wastewater treatment plant. The major tunnel projects are: the Blue Plains Tunnel (23,600 ft of 23-ft diameter tunnel), the Anacostia River Tunnel (12,500 ft of 23-ft diameter tunnel), the NE Boundary Tunnel (17,500 ft of 23-ft diameter tunnel) and the NE Boundary Branch Tunnels (11,300 ft of 15-ft diameter tunnel).

The Blue Plans Tunnel will be the first to be bid. RFQs for the design-build contract will be accepted in early 2010, with construction anticipated for

2nd quarter 2011. Based on the results of the Blue Plains Tunnels, subsequent projects may also be let as design-build packages.

All work is scheduled for completion by 2025.

FLORIDA

Miami

Government Cut Utility Tunnel

The project consists of 8,000 lf of 12-ft diameter utility tunnel underneath the Government Cut shipping channel. The channel is being dredged to accommodate larger vessels that are anticipated in conjunction with the Panama Canal expansion. The tunnel will cross 80 ft below sea level, lowering the alignment of existing utilities. The project includes a 25-ft diameter launch shaft on Fisher Island and a 24-ft diameter shaft on Miami Beach. For additional information visit: <http://www.governmentcututilitytunnel.com>.

INDIANA

Indianapolis

Deep Rock Tunnel Connector

A key component of the City of Indianapolis' long-term, \$1.8 billion plan to reduce raw sewage overflows, the Deep Rock Tunnel Connector comprises 6.5 miles of 18.5-ft diameter sewer tunnel that will provide extra capacity. The project was originally designed as the Belmont-Southport Interplant Connect — a shallow, soft ground tunnel that would have allowed the city to transfer flows from between two sewersheds and two treatment plants — but was redesigned to increase capacity with the idea the Southport treatment plant could be expanded in the future. The project is expected to cost \$160 million and is expected to bid early 2011.

NEW JERSEY

North Bergen

Hudson River Crossing

The Federal Transit Administration (FTA) has committed \$3 billion to the tunnel connecting Secaucus, N.J., to midtown Manhattan rail hubs. The Port Authority of New York and New Jersey followed suit and New Jersey Transit is committing about \$1.5 bil-

lion. The tunnel will be nearly 30,000 lf and 20-ft diameter.

Extensive geotechnical investigation has been completed and officials have begun prequalifying contractors. Officials anticipate some 25 contracts awarded for the project. The project is scheduled for completion in 2017.

The project comprises three tunnel sections to be let as design-build contracts: the Manhattan Tunnels, the Palisades Tunnel and the Hudson River Tunnel. The Manhattan Tunnels and Palisades Tunnels have been awarded.

OHIO

Cleveland

Euclid Creek Tunnel

The Euclid Creek Storage Tunnel will be constructed by TBM in the Chagrin shale bedrock at a depth of 190 to 220 ft below ground level. The tunnel will be 18,000 ft long with a finished diameter of 24 ft. The project will include a launch mining shaft and several drop shafts. The estimate is \$188.6 million. Construction start is expected in the fourth quarter 2010.

Cleveland

Dugway Storage Tunnel

The project includes the installation of a 24-ft diameter storage tunnel extending approximately 16,000 ft. The tunnel will be constructed by TBM through Chagrin shale at depths averaging 200ft below surface. Design is expected to begin in the fourth quarter of 2012 with construction expected to begin in the third quarter of 2014. The engineer's estimate is \$128.4 million.

Cleveland

Doan Valley Storage Tunnel

This 17-ft diameter tunnel will extend 9,700 ft. Design is expected to begin in the first quarter of 2013 with construction expected to begin in the first quarter of 2015. The engineer's estimate is \$88.2 million.

Columbus

OARS Tunnel Project

The City of Columbus, Department of Public Utilities, advertised Phase 1 of the Olentangy-Scioto Intercepting Sewer Augmentation Relief Sewer

(OARS) on Feb. 13, 2010, and was scheduled to open bids on April 28. Phase 1 generally consists of 23,300 ft of 20-ft internal diameter tunneled sewer. Phase 1 also includes a 52-ft internal diameter pump station shaft (Shaft 1), a 42-ft internal diameter screen shaft (Shaft 2), and a 48-ft internal diameter shaft (Shaft 6) with an internal surge chamber and hydraulic drop pipe. The depth to tunnel invert ranges from approximately 130 ft to 185 ft. Depth to bedrock varies from 30 ft to 120 ft. The tunnel will be constructed through limestone bedrock containing Karst features. Groundwater pressure at the tunnel elevation is anticipated to vary and require a pressurized face tunnel boring machine.

In addition to the tunnel and shafts, the project includes the following structures: 1) The pump station shaft (Shaft 1) will have an integral flow diversion structure; 2) the screen shaft (Shaft 2) will include the construction of a screen service building and the installation of screening equipment; and 3) a relief structure and tangential inlet will be constructed near Shaft 6.

Phase 2, which will be advertised for bids approximately 11 months after Phase 1, will include off-line Shafts 3, 4 and 5. Connections from Shafts 3, 4 and 5 will be through an adit/deaeration chamber constructed in Phase 2. Phase 2 will also include several structures adjacent to the site where Shafts 1 and 2 are constructed and will include the installation of mechanical, electrical and instrumentation/control components of the pump station.

RHODE ISLAND

Providence

Narragansett Bay CSO

Two near-surface interceptors for the Narragansett Bay Commission — the second phase of Providence's CSO Abatement Program — will run some 25,000 lf along the Woonasquatucket and Seekonk rivers. The Phase II facilities will connect to the 3-mile storage tunnel that has been operating since 2008.

Due to the dense urban environment, trenchless construction will predominate as the installation method.

The Woonasquatucket CSO Interceptor will comprise: approximately 16,500 ft of 48- to 72-in. near surface sewers in soil and rock; several connection and control structures; a 220-ft deep, 27-ft diameter work shaft; and a 220-ft deep, 1,800-ft long, 8-ft diameter connecting adit in rock. The Seekonk CSO Interceptor will comprise: approximately 7,300 ft of 48- to 72-in. near surface sewers in soil; and several connection and control structures. Bidding for the interceptors is scheduled for late 2010. Construction for Phase III, a second large storage tunnel, is expected to begin in 2017.

TEXAS

Austin

Water Treatment Plant 4

The Austin Water Utility is moving forward in the construction of Water Treatment Plant 4, a new 300 mgd treatment facility that draws water from Lake Travis to augment the city's potable water system. The project includes three tunnel components, including a deep raw water intake tunnel to convey lake water to the plant. The contract for the raw water tunnel and pipeline is expected to be ready for bid by May 1, 2010. Additionally, two other tunnels — the Jollyville and Forest Ridge tunnels — are under design and will be built to convey treated water from the new plant to the existing system.

The Jollyville Tunnel project, still under design, consists of 35,000 ft of 84-in. ID treated water pipeline and three shafts. The tunnel segment comprises at least 25,000 ft of tunnel, but some excavated sections may be converted to tunnel. The tunnel alignment stretches through predominantly limestone at depths of approximately 150 ft. Black and Veatch is the designer for Austin Water Utility. The project is expected to bid first quarter 2011.

CANADA

ONTARIO

Toronto

Toronto-York Spadina Subway Extension Project

The Toronto-York Spadina Subway Extension Project is a \$2.6 billion (CAN) that would extend existing sub-

way service 8.6 km (6.7 km of bored tunnel) from Downsview Station northwest through York University within the City of Toronto and north to the Vaughan Corporate Centre in the Regional Municipality of York. There are six stations sites currently planned.

In November 2008, Hatch Mott MacDonald was awarded the twin tunnel design contract. The Toronto Transit Commission has also awarded a contract to Lovat Inc. for four EPB TBMs. The project will be broken into two tunnel contracts via design-bid-build procurement. Preliminary work has begun on smaller advance contracts with the main construction packages scheduled to be let in 2010. Construction on stations and tunnels is expected to begin in early 2011. For information, visit www3.ttc.ca.

York

Southeast Collector Sewer

The Regional Municipality of York in the greater Toronto area is designing a 15-km (9.3-mile), 3-m (9.8-ft) diameter sanitary sewer tunnel. Hatch Mott MacDonald and AECOM have been retained for design of the project. The 100 percent design has been submitted to the owner.

Construction will not begin until approval of the environmental assessment, which was anticipated to happen in the first quarter of 2010. The tunnel will be constructed using earth pressure balance tunnel boring machines and installed with pre-cast concrete segmental lining in a one-pass system. The majority of the tunnel will be through dense Newmarket till with some softer soils expected. The Regional Municipality of York is procuring four EPB TBMs and the concrete segments to be used for the project.

The first of the TBMs, which were ordered from Lovat, is expected to be delivered in May. Construction is planned to start by mid 2010 with completion by mid 2013. The cost estimate is \$500 million CAN.

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