



Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

October 14, 2020

**Preliminary Finding of No Significant Impact
To All Interested Citizens, Organizations, and Government Agencies**

**City of Columbus – Franklin County
Lower Olentangy Tunnel
Loan Number: CS390274-0362**

The attached Environmental Assessment (EA) is for a combined sewer overflow elimination project in Columbus which the Ohio Environmental Protection Agency intends to finance through its Water Pollution Control Loan Fund (WPCLF) below-market interest rate revolving loan program. The EA describes the project, its costs, and expected environmental benefits. We would appreciate receiving any comments you may have on the project. Making available this EA and seeking your comments fulfills Ohio EPA's environmental review and public notice requirements for this loan program.

Ohio EPA analyzes environmental effects of proposed projects as part of its WPCLF program review and approval process. We have concluded that the proposed project should not result in significant adverse environmental impacts. More information can be obtained by contacting the person named at the end of the attached EA.

Any comments on our preliminary determination should be sent to me at the email address of the contact named at the end of the EA. We will not act on this project for 30 calendar days from the date of this notice. In the absence of substantive comments during this period, our preliminary decision will become final. After that, the City of Columbus can then proceed with its application for the WPCLF loan.

Sincerely,

Jonathan Bernstein

Jonathan Bernstein, Assistant Chief
Division of Environmental & Financial Assistance

Attachment

ENVIRONMENTAL ASSESSMENT

Project Identification

Project Name: Columbus – Lower Olentangy Tunnel

Applicant: City of Columbus
910 Dublin Road
Columbus, OH 43215

Loan Number: CS390274-0362

Project Summary

The City of Columbus in Franklin County (see Exhibit 1) has requested \$253,000,000 from the Ohio Water Pollution Control Loan Fund (WPCLF) to construct a large-diameter tunnel to provide adequate conveyance capacity and inline storage to eliminate sewage overflows to the Olentangy River.

The Lower Olentangy Tunnel (LOT) is a 12-foot diameter tunnel project that extends approximately 17,000 linear feet (or 3.4 miles in length) south from Tuttle Park, just north of Ohio State University's campus, to Vine Street in the Arena District in downtown Columbus. The LOT is being constructed to pick up combined sewer overflows (CSOs) to provide relief at connection points along existing interceptor sewers located near the Olentangy River. A total of four shaft locations and associated work areas are necessary to conduct tunneling for this project: Vine Street Shaft, Gowdy Field Shaft, 2nd Avenue Shaft sites A & B, and Tuttle Park Shaft. As this project involves tunneling beneath the ground, the primary surface disturbances will occur at and surrounding the five shaft sites that are necessary to construct the tunnel. A crossing of the Olentangy River is also planned at Tuttle Park.

History and Existing Conditions

The combined sewer system is the oldest part of Columbus' collection system carrying both stormwater and wastewater from areas in the City to one of Columbus' two wastewater treatment plants. The combined system can become overloaded from an influx of stormwater during heavy rainfall events and discharge the excess into the Olentangy River at designed CSOs.

This project is a result of consent orders with the Ohio Environmental Protection Agency (Ohio EPA) to reduce sewer overflows and improve surface water quality. A key component is the construction of the Lower Olentangy Tunnel (LOT). Although there are designed sanitary relief structures (DSRs) to prevent overloading and sewage backups into basements, these sanitary sewers are not designed to carry stormwater from heavy rainfall events which cause stormwater infiltration and can result in overloading the system. The LOT involves the construction of a large-diameter sewer that will provide relief by accepting wet weather flows from existing inceptor sewers: the Olentangy Scioto Interceptor Sewer (OSIS), the Franklin-Main Interceptor Sewer (FMN), the Olentangy Main Interceptor Sewer (OMI), and the Kinnear Subtrunk Sewer (KST). These are strategically located to reduce or eliminate overflows.

The LOT will also provide inline storage during critical periods to help achieve the overflow requirements. All of the combined stormwater and wastewater collected by the LOT will flow to the Jackson Pike Wastewater Treatment Plant (WWTP), where it will be treated prior to releasing into the Scioto River. The construction of LOT will prevent combined stormwater and wastewater from reaching the Olentangy River during heavy precipitation events.

Hydraulic modeling was a key component of the LOT project design to ensure all the operational goals and consent order requirements are met. The sizing of various elements of the project was conducted using these models for performance evaluation and specific conditions such as typical year rainfall, 10-year flow events, and average annual overflow volume.

Water Quality

The project is located in the Scioto River Watershed. Combined sewer overflows at this location result in discharges to the Olentangy River, which is currently designated as Warmwater Habitat (WWH) Aquatic Life Use in Ohio Water Quality Standards. This project will significantly reduce overflows into the Olentangy River and benefit the water quality.

Population and Flow Projections

The Jackson Pike WWTP currently serves a collection system consisting of 2,782 miles of sanitary sewers and 167 miles of combined sewers in the north-western and western half of Franklin County that collect domestic and industrial wastewater and stormwater from the combined system. The WWTP has a design capacity of 68 million gallons per day (MGD) with a peak treatment capacity of 102 MGD. Average daily flow is 79.5 MGD.

As the project area is primarily developed and Columbus expects an incremental growth to population and economic growth in the area, the LOT project is appropriately sized to provide additional capacity to handle current and future wastewater flows.

Alternatives

Six primary alignment alternatives were evaluated for LOT. Each alignment commences at the upstream end of the OSIS Augmentation and Relief Sewer (OARS) Tunnel at Shaft 6, near the intersection of Neil Avenue and Vine Street. The alignments then proceed upstream heading north, generally paralleling the Olentangy River and the existing sewers to be relieved, extending north of the Ohio State University campus. The alignments terminate at Tuttle Park.

The six alignments evaluated were as follows:

- Shallow West
- Shallow East of River
- Deep Soft Group West
- Deep Soft Ground East
- Deep Rock West
- Deep Rock Neil Avenue Express

The alignments vary not only in horizontal location but also depth. There are generally three vertical zones that were considered for LOT:

- Shallow – These alignments were planned as shallow as possible with the intent to have significant portions constructed by open cut. Due to conflicts with the river, existing utilities, and other structures, these alignments had to be lowered to an extent that significant lengths of the project would be constructed trenchlessly. Open cut alternatives also limit the maximum diameter of LOT to 10 feet as this is the reasonable upper range of pipe that is available and can be trucked to the site.
- Deep Soft Ground – These alignments are constructed by tunneling through soil at an elevation deep enough to reduce the risk of surface settlement, while remaining above rock. Because surface settlement remains a concern, the horizontal alignment must attempt to avoid buildings, busy roadways, bridge foundations, utility pilings, and excavation support systems that were left in place.
- Deep Rock – These alignments would be constructed by tunneling through rock. Constructing the tunnel within rock eliminates the risk of surface settlement, allowing the horizontal alignment to traverse either nearer to or directly underneath surface structures.

All alignments were evaluated to confirm they meet the requirements of the consent order and are able to be completed by the consent order’s deadline of July 1, 2025. Additionally, the alternatives were evaluated by probable construction cost and risk comparison. Risks evaluated included potential harm to public, damage to structures, utilities, or the environment, potential obstructions, and level of difficulty in tunnel cleaning and repair. Hydraulic analysis was used to investigate the impact of different proposed alignments of LOT on system performance and ability to meet future needs. Geotechnical investigations were also conducted including subsurface exploratory borings and installation of groundwater monitoring wells.

The alignments evaluated are depicted in Exhibit 2 below.

Selected Alternative

The selected alignment for the Lower Olentangy Tunnel is the Deep Soft Ground West (DSGW) alignment. The DSGW alignment is a tunneled alignment that is located within soft ground along the west side of the Olentangy River. This alignment stays within public rights-of-way as much as possible, generally following along Olentangy River Road. The depth has been set to make it a soft ground tunnel for the entire length. This is deep enough to avoid most man-made obstacles and shallow enough to avoid mixed face conditions. The path of this alignment can be seen in Exhibit 3 below.

The project consists of a 12-foot diameter sewer constructed by tunneling beneath the ground with a pressurized face Tunnel Boring Machine. The corridor for the approximately 12-foot Lower Olentangy Tunnel project extends north approximately 17,000 linear feet from the termination of the OARS Tunnel, located near the intersection of Neil Avenue and Vine Street, to the proposed Tuttle Park Shaft, located in Tuttle Park. Vertically, the DSGW alignment has a depth generally ranging from 55 to 70 feet, with a short run approximately 90 feet deep where crossing State Route 315 near Kinnear Road. There is also a short run of tunneling approximately 40 feet deep below the Olentangy River. Drop shafts, diversion and relief structures, connection sewers, weir gates, and other appurtenances are also included in this project.

The 12-foot diameter was selected to provide a greater in-storage and flow capacity, as well as greater flexibility to handle any future increases in flow. This larger diameter also provides more

room for adequate tunneling equipment to improve both the efficiency and the safety of tunneling operations.

A smaller, 7.5-foot diameter tunnel will also be constructed as a part of this project. Titled the 2nd Avenue Tunnel, it extends approximately 1,100 linear feet from the Gowdy Field Shaft, located west of Olentangy River Road, to the 2nd Avenue Shaft, located east of the Olentangy River to the intersection between 2nd Avenue and Perry Street.

The project corridor consists of four, non-contiguous shaft sites that are referred to as the Tuttle Park Shaft Site, Gowdy Field Shaft Site, Vine Street Shaft Site, and 2nd Avenue Shaft Site. The Tuttle Park Shaft Site is located within Tuttle Park, west of Neil Avenue, north of W. Patterson Avenue, and east of the Olentangy River. The Gowdy Field Shaft Site is located west of Olentangy River Road, south of 3rd Avenue and east of the CSX Railroad. The Vine Street Shaft Site is located south of Spruce Street, north of Vine Street, and west of Neil Avenue. The Second Avenue Shaft Area A Site is located within Second Avenue and Harrison Park, just east of the Olentangy River. The Second Avenue Shaft Area B is located within road rights-of-way and streets. These sites are depicted in Exhibit 4 below.

The current project plans will involve the addition of a 0.9-acre lot to facilitate a proposed trailer site and laydown area associated with the Lower Olentangy Tunnel project. The lot is located southwest of the Twin Rivers Drive and Water Plant Drive intersection and north of US 33. It currently consists of gravel and maintained grass and will be converted entirely into a gravel lot with minimal subsurface disturbances.

The alignment will take advantage of the use of trenchless technology throughout the project corridor. The only expected ground surface disturbance will occur at shaft sites and relief connections. This reduces impacts to traffic and local residents and reduces dust and air quality issues. Limited impacts to vegetation and trees are expected during construction. The choice of a deep soft ground, trenchless construction method considerably reduces the environmental and ecological impacts. The alignment will pass beneath a known landfill at Gowdy Field where careful monitoring for contamination will occur. Additionally, a portion of the Olentangy River near Tuttle Park will be temporarily open cut to apply grouting for tunnel stabilization. Overall, the LOT capital improvement project will have a positive impact on the environment due to the significant reduction in combined sewer overflows being discharged to the Olentangy River.

Implementation

Project Costs

Columbus plans to borrow \$253,000,000 from the WPCLF. During the 20-year loan period Columbus will save approximately \$34,811,449 by using WPCLF dollars at the standard rate of 0.52%, compared to the market rate of 1.77%.

Project Schedule

The anticipated loan award will occur in December 2020. Construction is expected to begin immediately and is expected to be completed by March 2026.

Public Participation

Numerous discussions with varying parties of interest have been held surrounding the design and implementation of this project for some time. In addition, a public notice was posted on the City of Columbus' Public Utilities webpage detailing the proposed construction project. Contact information was provided for any public questions or concerns. Ohio EPA is unaware of any public opposition to the project.

Reviews of the respective environmental resources were completed by Ohio EPA, Division of Environmental and Financial Assistance. Other agencies such as the State Historic Preservation Office, Ohio Department of Natural Resources, U.S. Fish & Wildlife Service, and U.S. Army Corps of Engineers were consulted for technical input, or for conformance with legislation under their jurisdiction.

Ohio EPA will make a copy of this document available to the public on its web page: <http://epa.ohio.gov/defa/ofa.aspx> (Under the "What's New" tab, scroll to "Documents Available for Review and Comment – WPCLF Documents for Review and Comment") and will provide it upon request to interested parties. Information supporting this Environmental Assessment (EA) is available from the project contact named below.

Environmental Impacts

Construction of this project could affect environmental features. Because the project is designed to provide additional capacity to prevent wet weather overflows in an existing commercial and residential area, the project is not expected to lead to new development or associated indirect or cumulative environmental impacts.

Construction will occur in previously disturbed areas, along roadways and within public rights-of-way. No change to land use or topography will occur.

Air Quality

Franklin County is in attainment for all regulated criteria air pollutants applicable to this project. The contractor will prevent unnecessary dust from construction activities from entering the atmosphere. Trenchless construction will result in less dust and air quality issues. The majority of dust and air quality issues will be concentrated at shaft and relief structure sites. Dust on unsurfaced streets or parking areas and any remaining dust on surfaced streets shall be controlled with water as needed. Because of this approach, there will be no significant adverse short-term or long-term impacts on local air quality.

Archaeological and Historical Resources

Coordination with the State Historic Preservation Office (SHPO) was completed for this project. As a tunneling construction method will be implemented for the installation of the sewer line between 45 to 80 feet below ground surface in addition to five shaft site areas which are between 0.25 and 4 acres in size (totaling approximately 13 acres), a Phase I Cultural Resources Management investigation was conducted.

These areas within the City of Columbus have undergone constant development throughout the years. The areas immediately surrounding the shaft sites and river crossing include modern residences, modern commercial buildings, parking lots, highways, and wooded areas previously disturbed by modern utilities installation. Through a combination of shovel testing and visual inspection of the project corridor, no archaeological sites were identified. Additionally, a windshield

survey of the houses and buildings surrounding the shaft sites identified portions of the Near North Side Historic District within and adjacent to the Second Avenue Shaft Areas A and B. This setting of the historic district will not be adversely affected by the proposed development since construction within the shaft sites will be temporary and the sewer alignment will be constructed below ground surface. As a result, no further work was recommended.

In the event of archaeological finds during construction, Ohio Revised Code Section 149.53 requires contractors and subcontractors to notify SHPO of any archaeological discoveries in the project area, and to cooperate with the Office in archaeological and historic surveys and salvage efforts when appropriate. Work will not resume until a survey of the find and a determination of its value and effect has been made, and Ohio EPA authorizes work to continue.

Terrestrial Habitat and Endangered Species

Nine federally listed species occur in Franklin County: the endangered Indiana bat, the endangered running buffalo clover, the endangered Scioto madtom, the endangered clubshell mussel, the endangered northern riffleshell, the endangered rayed bean, the endangered snuffbox mussel, the threatened northern long-eared bat, and the threatened rabbitsfoot mussel.

As trenchless construction will be used to construct the tunnel sewer line, surface disturbance will be limited to the five shaft areas. These areas are comprised of maintained road rights-of-way, residential homes, mowed grass/lawn, shrub areas, forested riparian corridor along the Olentangy River, and multi-use paths.

The Indiana and northern long-eared bats have similar summer maternity and roosting habitat preferences (trees with large crevices or loose, sloughing bark higher than ten feet above the ground). Construction within the Tuttle Park shaft will require approximately 2.12 acres of tree clearing. Tree and vegetation removal will occur from October 1 through March 31 when bats are presumed absent from the area. The construction area contains few areas with partial shade that will be impacted by the project. Most of the project areas are either in areas with full shade or full sun. Based on the limited amount of areas with partial shade, the project will have no effect on the running buffalo clover.

Per the Ohio Mussel Survey Protocol, the Olentangy River is classified as a Group 1 stream. Impacts to a Group 1 stream require a reconnaissance survey and/or mussel survey prior to construction activities. Due to the planned construction activities associated with the northern crossing of the Olentangy River, reconnaissance surveys will be required at this river crossing. If it is determined that mussels are present, then the Ohio Mussel Survey Protocol for a Group 1 stream will be followed and a mussel relocation will be conducted if necessary.

Based on this information, the project will have no significant adverse short-term or long-term effect on terrestrial habitat or endangered species.

Farmland Protection

Based on the review of the project planning and design, the project will not remove or change the use of prime farmland, so no farmland losses are expected as a result of this project.

Floodplains

According to project planning and design, portions of the alignment fall below floodplain features including the floodway and floodplain. Due to the temporary nature of all shaft construction sites and

trenchless construction of the tunnel, no permanent structures will remain within floodplains.

Ground Water Resources

To avoid adverse impacts to ground water resources, the construction contract includes specifications for appropriate and safe dewatering of deep excavations and management of ground water.

The LOT alignment will pass beneath Gowdy Landfill. Boring discovered fill debris and waste encountered to a depth of approximately 30 feet below the ground service. The materials placed in the landfill are unknown. Due to this known occurrence, careful monitoring for contamination will occur.

Safety, Noise, Traffic, and Aesthetics

This alignment allows for the ability to utilize trenchless construction techniques. This minimizes impacts to the public and allows for the possibility of 24-hour operations. However, construction of the shaft sites and relief connection may result in impacts to the community. These impacts include, but are not limited to, traffic congestion, noise generation, and lighting. These issues may result in disruption to normal schedules and increased roadway traffic will result from construction activities. Mitigative measures will need to be implemented to limit noise generation. Due to the vicinity of the project to Tuttle Park and the surrounding residential neighborhood, working hours should be coordinated with the city to ensure that construction does not affect social events and festivities.

The river itself and access to the river at Tuttle Park and Harrison Park should be kept open to boaters as much as feasibly and safely possible during the project to keep impacts on recreation at a minimum. A recreational closure of the river will be needed when the causeway is installed and impedes recreational traffic. A portage trail, if feasible, should be established and marked for safe passage for paddlers to walk around or through the construction area. Signs/buoys/markers providing appropriate language or diagrams will be placed 300 feet upstream and downstream of the Tuttle Park project area to alert boaters of construction activity and provide instructions to safely navigate around/through/or avoid the project area.

Surface Water Resources

Mitigation for temporary river impacts will be accomplished through the use of best management practices for sediment and erosion control during construction of the project, as well as permanent soil stabilization along the impacted river banks through the use of erosion control matting and by seeding all disturbed areas. Stormwater permits and stormwater prevention plans for construction activities will be prepared as needed. These will be included in construction plans to decrease erosion and sedimentation during and after construction of the shaft sites, including the placement of sediment fence inside impact areas. All sediment controls that are utilized will be kept in place during construction activities and until the sites have been stabilized. All areas disturbed during construction will be seeded to encourage the establishment of a vegetative cover and decrease erosion potential.

However, three stream crossings are planned for the Olentangy River. Columbus will use trenchless construction to tunnel beneath the Olentangy River at the two southern river crossings. The city will also attempt to use trenchless construction to tunnel beneath the Olentangy River at the northern river crossing. However, the geology beneath the riverbed is such that the limestone bedrock has several peaks and valleys within the zone where the sewer tunnel is proposed. This has resulted in a mixed phase condition containing both limestone bedrock and shale. This creates at least the

potential for the tunneling machine to become stuck within the transitions between the two phases (limestone and shale). In order to reduce this chance, Columbus will impact the river in order to install a temporary causeway across it to pre-grout the tunnel route from the surface. In the event the tunneling machine would become stuck, it would also be necessary to temporarily open cut the Olentangy River in order to retrieve it.

Creating this causeway would involve a temporary discharge of dredged and/or fill material into a navigable water of the United States, subject to the requirements of Section 404 and Section 10, and work under a navigable water of the United States, subject to the requirements of Section 10. This project meets the requirements for a Nationwide Permit for construction and a 401 certification from Ohio EPA.

Designated Wild and Scenic Rivers will be unaffected by this project as there are none located within the project's vicinity.

Wetlands

Wetland features were identified along the Olentangy River within the project area. It is not expected that any portion of these wetlands will be open-cut.

Energy Use

This project will have little effect on local or regional energy supplies. Through utilizing the already existing Columbus wastewater collection system in place, no additional energy from the county is required.

Local Economy

Columbus has minimized project costs by obtaining a low-interest loan through the WPCLF. This allows a lower annual sewer bill for the new customers than otherwise would be possible. The projected residential sewer bills with the implementation of this project will be approximately \$898/year. This is approximately 1.8% of the median household income (MHI) of Columbus, which is \$49,478.

By using WPCLF financing for this project, Columbus has minimized the economic impact on customers.

Conclusion

Based upon the available facilities plans, detail plans, and other information for this project, Ohio EPA concludes that no significant short-term or long-term adverse direct environmental impacts will result from the project as related to the environmental features discussed in this Environmental Assessment. This is because these features do not exist in the project area, the features exist but will not be adversely affected, or the impacts of construction will be temporary and mitigated.

This project equally serves the entire affected community and no segment of the community will be faced with additional adverse impacts or be deprived of environmental benefits, compared to any other segment.

For these reasons, this project, alone or in combination with other projects, is not expected to result in any significant indirect or cumulative short-term or long-term adverse environmental impacts on the quality of the human environment or on sensitive resources.

The construction of the Lower Olentangy Tunnel will prevent combined stormwater and wastewater from overflowing into the Olentangy River during heavy precipitation events.

Contact Information

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Exhibit 1: Project Location Map



Exhibit 2: Tunnel Alignment Alternatives

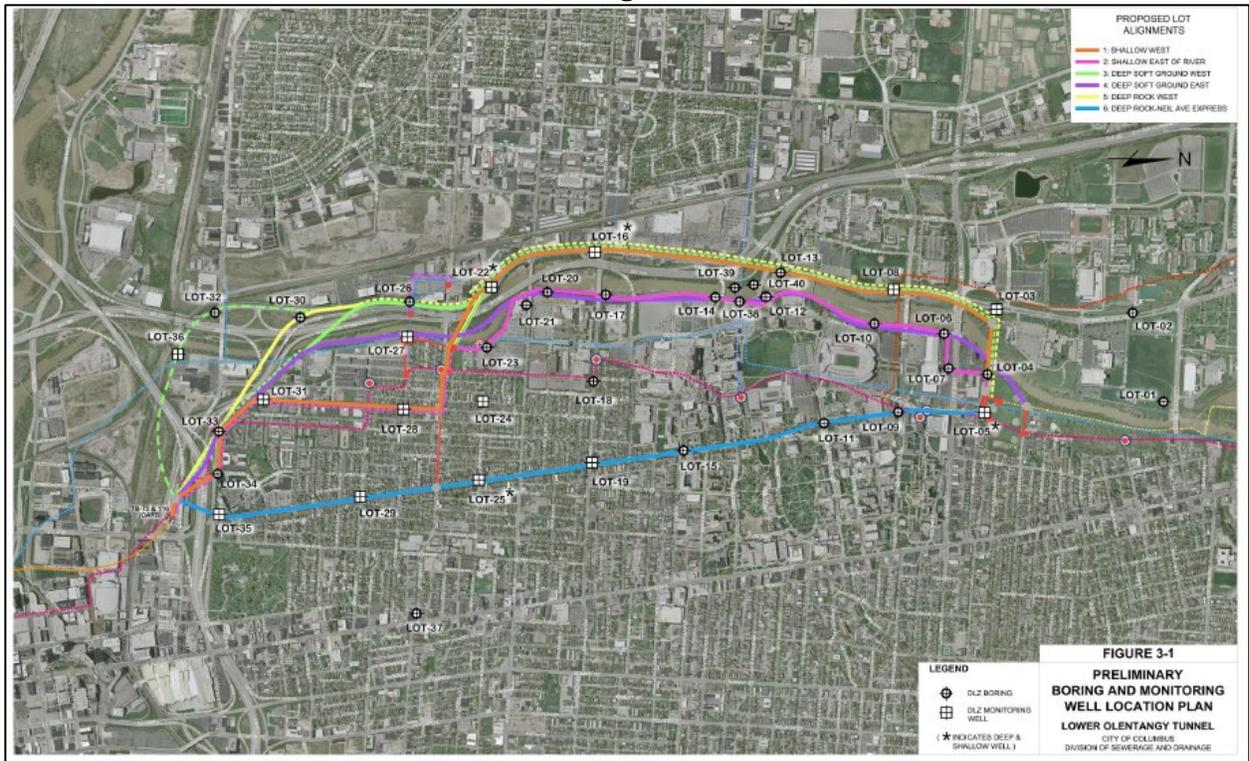


Exhibit 3: Selected Alternative Map

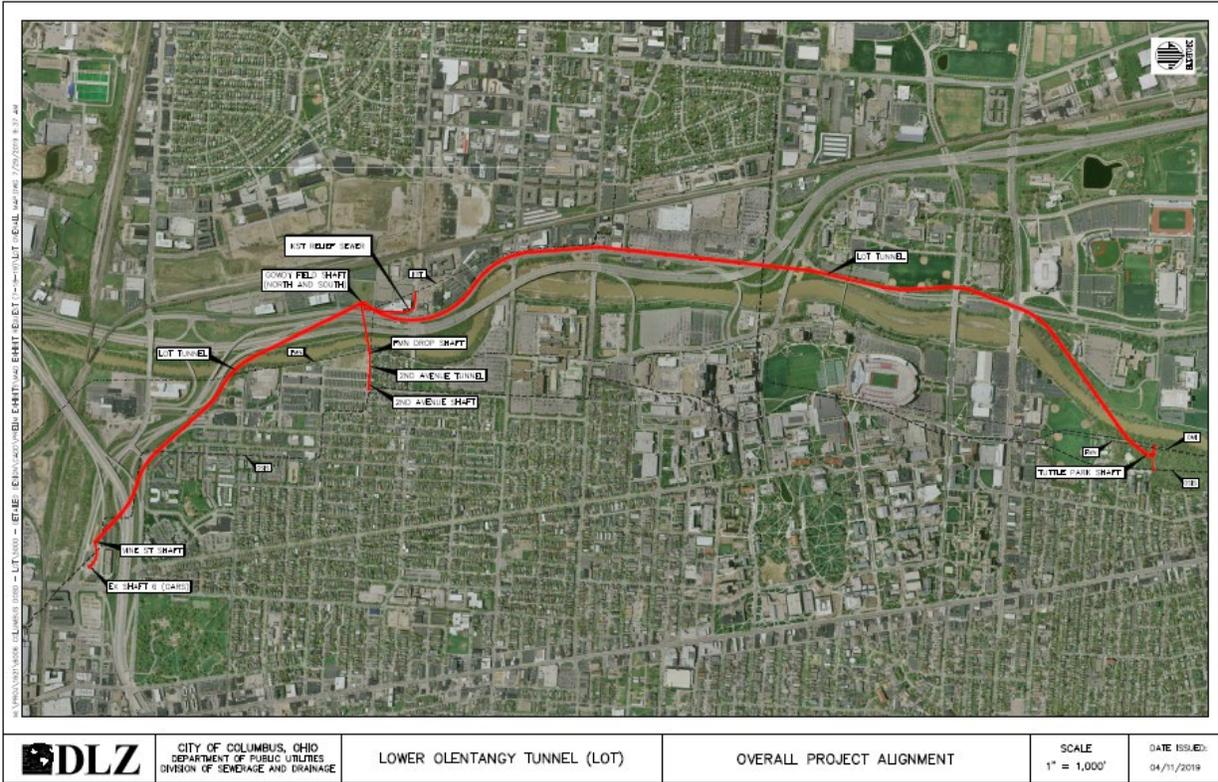


Exhibit 4: Project Location Map – Tunnel Alignment and Shaft Sites

