

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** July 23, 2025  
**SUBJECT:** Metropolitan Water Tunnel Program  
Look Ahead




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**COMMITTEE:** Water Policy and Oversight

  X   INFORMATION  
       VOTE

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### RECOMMENDATION:

For information only. This staff summary provides a summary look ahead of upcoming activities for the Metropolitan Water Tunnel Program (“Tunnel Program”), including Construction Management services, Owner’s Representative services, land acquisition, community and stakeholder agreements, and emergency response.

### DISCUSSION:

#### Program Schedule

The Tunnel Program is a multi-decade effort with planning, permitting, design, and construction, each taking significant time to complete. Early program planning began in 2015. In 2018, the Authority established the Metropolitan Tunnel Redundancy Department (Tunnel Department) to develop and execute the Tunnel Program and lead its day-to-day management, decision-making and selection of implementation strategies as well as be responsible for the management of all professional services and construction contracts for the Tunnel Program.

#### Completed, Ongoing and Future Contracts

Currently, four professional services contracts to support the Tunnel Program have been approved by the Board, executed, and are being managed by the Tunnel Department. The professional services contracts include:

- Program Support Services (Contract 7655), which provides general consulting, submittal review, risk management support, constructability reviews, cost estimating/validation, schedule support, staff augmentation, and Expert Review Panel engagement support. This contract was awarded to JCK Underground, Inc. for an initial term of five years for \$10,247,877. The initial term ended in April 2024, and the first of two optional two-year terms at \$7,000,000 was approved by the Board in December 2023;
- Preliminary Design (Contract 7159), which consisted of the initial geotechnical investigations, preparation of Environmental Impact Reports, and preparation of a Preliminary Design Report, drawings, schedule and cost estimate. This contract was

awarded to CDM Smith Inc. for a term of 42 months for \$15,692,527, and ended in January 2024;

- Geotechnical Support Services (Contract 7557), which focuses on the collection of geotechnical/geological data to support final design, bidding and construction of the Program. This contract was awarded to GEI-McMillen Jacobs JV for a term of 36 months for \$12,789,889, and will end in January 2026; and
- Final Design Engineering Services (Contract 7556). This contract was awarded to WSP USA Inc. for a term of 180 months. The final design services include the development of the Basis of Design reports, performance of geotechnical investigations, final design development of two tunnel construction packages and three enabling works construction projects, along with project controls, risk management, quality management, cost estimating, and construction scheduling. The final design phase of this contract is for 60 months for \$93,605,158 and will be completed in November 2029. As set forth in the October 23, 2024 Staff Summary for the award of Contract 7556, given the complexity and scope of the Tunnel Program, the performance of the design services may be critical to determine the duration of each tunnel construction package, and the schedule and level of effort required for engineering services during construction (ESDC). A detailed scope of ESDC will be developed by staff after the completion of the final design for each tunnel construction package. Staff will thereafter negotiate the cost for tunnel construction ESDC and seek authorization for such services from the Board which, if approved, will be implemented through amendment(s) to Contract 7556. The expected duration of ESDC services is 120 months.

Additional professional services contracts are planned in support of the Tunnel Program. These include Construction Management (CM) and Owner's Representative (OR) services. Procurement for CM services is to start in July 2025, and the OR services procurement is to start in December 2025. Staff will provide recommendations for award of these contracts to the Board of Directors for authorization in the future.

Two tunnel construction contract packages are planned: one for the North Tunnel and one for the South Tunnel. Bidding the South Tunnel construction contract is targeted for 2027 with tunnel construction starting in 2028. Bidding and start of construction of the North Tunnel is targeted for 2028 and 2029, respectively. Tunnel construction, including surface work and commissioning, is estimated to take eight to 12 years to complete.

Three smaller construction contracts are planned to be completed prior to the start of tunnel construction. This will remove early enabling work from the tunnel contracts' critical paths. These enabling contracts are related to demolition of existing buildings, site reconfiguration to allow continuity of current use, and dewatering drain line work at or near future launching shaft sites.

### **Construction Management Services**

CM services would be similar to those provided on previous Authority tunnel projects, such as the MetroWest Water Supply Tunnel (MWWST). The scope of work would include full CM services, pre-construction services, construction contract administration, resident engineering and resident inspection, and other field services.

The CM has an important role prior to the start of construction in verifying the contract documents include all the requirements needed for the contractor to complete the work. Pre-construction services provided by the CM would include constructability and bidability reviews of the final design engineer's (FDE) design submissions. These independent reviews look at the design from a potential contractor's viewpoint to verify the contract documents follow the planned scope of construction for each tunnel, and the construction cost estimate captures current market conditions based on a reasonable construction schedule sequence.

Construction contract administration services would follow MWRA procedures. Contract administration will also include public relations support during construction. In addition, contract administration will manage all necessary closeout documentation, including submission of as-built drawings to the Authority for its records.

When the tunnel construction contracts begin, the CM would provide resident engineering and resident inspection (RE/RI) services. The RE/RI role requires CM staff with expertise and knowledge of specific tunnel and shaft construction methods for large water system infrastructure. The RE/RI services will continue during the disinfection and flushing when the tunnels are fully integrated into the Authority's water infrastructure and put into service.

CM services would also include other important field services such as: quality assurance of the constructed work independent of the tunnel contractor's quality control; survey checks of tunnel alignment and grade; vibration, noise, and geotechnical monitoring; pre-construction and post-construction condition assessments for structures near the tunnels and shafts; and environmental compliance oversight.

Subject to the Board's authorization, the CM contract will extend from spring 2026 through the duration of the tunnel construction projects (currently anticipated to end by 2040), and include the respective warranty periods. The CM would be precluded from any other role concerning the Tunnel Program.

Staff plan to follow a two-step procurement process for CM services. A Request for Qualifications (RFQ) will be publicly advertised in late July 2025. A Request for Proposals (RFP) will be issued to firms shortlisted after the RFQ phase.

### **Owner's Representative Services**

OR services have not been used on previous Authority tunnel projects. Passage of Massachusetts General Laws Chapter 30, §39M½ in 2008 requires an Owner's Representative for certain projects estimated to cost in excess of \$50 million, including construction of a tunnel. Accordingly, an OR services contract is planned for the Tunnel Program. The OR services would be independent of the FDE, CM, contractors, and subcontractors involved in the Tunnel Program.

The OR services would include:

- peer review of final design engineering submittals;
- oversight of cost recovery and value engineering practices implemented for the Tunnel Program; and
- filing annual reports with the Massachusetts Inspector General's Office.

Subject to Board approval, the OR services contract will extend from spring 2026 through the duration of the tunnel construction projects. The OR services consultant would be precluded from any other role concerning the Tunnel Program.

Staff plan to follow a one-step Request for Qualifications/Proposals (RFQ/P) process for OR services. The RFQ/P would be advertised later in 2025.

### **Project Labor Agreement**

Staff intend to retain counsel, as it has in the past, to assist in evaluating the feasibility of using a Project Labor Agreement for the Tunnel Program. Staff will return to the Board with further updates.

### **Land Acquisition**

Land acquisition will be required for shaft sites, along pipeline routes, and for subterranean easements along the tunnel alignments. All land acquisitions will be coordinated and in compliance with MWRA's Real Property Acquisition Policy and approval requirements. Where the Tunnel Program's current design would impact land owners who are state agencies and municipalities, the Authority will coordinate with these governmental bodies to comply with their multi-step requirements and approval processes for land dispositions. Staff are working with each stakeholder to identify land disposition steps and timing to ensure that such will meet the Tunnel Program's schedule for land acquisition.

Applicable land acquisitions will need to be completed prior to bidding each tunnel construction package, preferably by the 90% design stage. The design details necessary to prepare acquisition documents will likely not be finalized until after the 60% design stage. The time period between 60% and 90% design is approximately 12 months for each tunnel construction package, leaving a significant number of acquisitions to be executed expeditiously. Thus, land acquisitions are on a critical path for the Tunnel Program's schedule. Staff have already begun coordinating the shaft site acquisitions, pipeline easements, and access easements with each land owner in order to mitigate a potential schedule impact.

Any recommended land acquisition not within the Executive Director's delegated authority, such as acquisitions from public entities, will be presented in detail to the Board for authorization. A summary of land acquisitions for each tunnel is provided below.

### **Shaft Site Land Acquisition**

The two tunnels will include 13 shaft sites of which three will be on land currently under care and control of the Authority. These three shaft sites are School Street in Waltham, St. Mary Street Pumping Station in Needham, and the Newton Street Pumping Station in Brookline, and none will require new land acquisition.

The remaining ten shaft sites are on land that is not currently owned by MWRA, and will require land acquisition from the Massachusetts Department of Transportation (MassDOT), the Department of Conservation and Recreation (DCR), City of Waltham, and Town of Wellesley. Each shaft site was evaluated as part of the Environmental Impact Report, which provided opportunity for community outreach and public comment.

### **MassDOT Property Shaft Sites**

Five shaft sites are on land under care and control of MassDOT. These include all three of the tunnel boring machine launching shaft sites, one receiving shaft site, and one large connection shaft site.

Each site provides direct access onto I-90 and I-95, which will greatly reduce construction traffic on local roadways. The two shaft sites within the I90/I95 Interchange in Weston, on either side of Park Road, will provide connection to the Authority's Hultman Aqueduct. A portion of these shaft sites will be within land that is under care and control of the Authority associated with the Hultman Aqueduct. However, a portion of these shaft sites will extend onto adjacent land that is under care and control of MassDOT.

Discussions between the Authority and MassDOT to date indicate that the land acquisition process would be for a permanent easement.

### **DCR Property Shaft Sites**

Two of the shafts will be on land under care and control of DCR, and both are part of the South Tunnel. One is a receiving shaft site and one is a connection shaft site. The receiving shaft site is located on land at the intersection of American Legion Highway and Morton Street in Mattapan (American Legion). Staff are also working with the Department of Youth Services (DYS) on possible access to the shaft site through adjacent land that is under care and control of DYS.

The connection shaft site is located on land at the intersection of the Arborway and South Street in Jamaica Plain (Southern Spine Connection). In discussion with DCR and review of the property records, disposition of land at the Southern Spine Connection site will require Article 97 legislation to meet the obligations of the Open Space Act, including the identification of replacement land. The Authority is working with DCR to identify appropriate land to meet this requirement.

### **Waltham Property Shaft Sites**

One receiving shaft site (Lower 190 Trapelo Road) and one connection shaft site (Cedarwood Pumping Station) associated with the North Tunnel are owned by the City of Waltham. The Lower 190 Trapelo Road site will be the termination of the North Tunnel providing the connection to the Authority's WASM 3 pipeline. The Cedarwood Pumping Station connection will provide a redundancy. Currently, the Cedarwood Pumping Station has a single connection to the Authority's WASM 3 pipeline. The Authority provided the Waltham City Council with a second Tunnel Program update in June 2025 regarding the land needs in the City.

### **Wellesley Property Shaft Site**

One connection shaft site (Hegarty Pumping Station) associated with the South Tunnel is owned by the Town of Wellesley. The Hegarty Pumping Station connection will provide a redundant connection to this pumping station that currently has a single connection to the Authority's Section 80 pipeline. In discussion with Wellesley and review of the property records, disposition of land at this site will require Article 97 legislation to meet the obligations of the Open Space Act, including the identification of replacement land. The Authority is assisting Wellesley in identifying appropriate land to meet this requirement.

### **Pipeline Easements**

Easements for pipelines in roadways or on public or private land for new water and drain pipelines will be required at eight sites involving approximately 6,000 feet of new pipeline. Staff are coordinating the pipeline alignments for each site with the landowners to minimize impacts.

### **Tunnel Subterranean Easements**

Subterranean easements will be required for each property below which the new tunnels will be constructed. On past Authority tunnel projects, such as the MWWST, the subterranean easements were defined as extending 50-feet-wide by 50-feet-high centered on the tunnel alignment.

The subterranean easements will be 200 to 450 feet below ground and will not allow for surface access. Subterranean easements to be acquired that extend below protected and recreational open space will be subject to Article 97 legislation, but are not anticipated to require replacement land under the Open Space Act. The number of subterranean easements to be acquired will depend on the final tunnel alignments. Current estimates indicate approximately 160 subterranean easements will be required for the North Tunnel and approximately 440 subterranean easements for the South Tunnel.

### **Community and Stakeholder Agreements**

Staff continue to coordinate with the seven communities in which the tunnels will be located. The final design will address a wide range of topics besides tunnel design including land acquisition, permitting and local regulations, public safety, emergency response, public communications, water supply contingency, work hours, hauling hours and routes, traffic management, dust and noise control, blasting and vibration control, connections to community water systems, mitigations, and final site conditions (fencing, lighting, landscaping, etc.). These items will need to be resolved with each community and documented in a Memorandum of Understanding (MOU). Similar MOUs would be developed with DCR, MassDOT, and DYS related to land acquisitions.

Preferably, any MOU would be completed by the 90% design stage so that it could be included in the respective construction bid package. MOUs are not currently on the critical path, but may be in the future if efforts are not advanced in line with the Tunnel Program's schedule. All recommended MOUs will be presented to the Board for authorization.

### **Emergency Response**

Staff are coordinating with local fire and emergency management services (EMS) entities from multiple communities to support the Tunnel Program with emergency response to the shaft sites during construction. The contractor will be responsible for safety and for providing the tunnel rescue teams required by OSHA. However, as has been done on past Authority tunnel projects and consistent with industry practice, advanced coordination during the design phase is necessary to ensure a proper framework is established for local fire and EMS response during construction. The framework is expected to include local fire and EMS personnel receiving specialized training, procuring specialized equipment, and establishing a coordinated response by the various communities. Fire and EMS personnel from the seven communities have indicated they would have to rely on mutual aid agreements between the communities as no one community in the Tunnel Program area is large enough to be the sole emergency responder during construction. Additional updates on the emergency response work will be presented to the Board in the future.

### **BUDGET/FISCAL IMPACTS:**

The FY26 CIP includes \$2.1 billion for the Metropolitan Water Tunnel Program. This budget will be refined during final design. It includes \$151.1 million for CM services and \$6.3 million for Owner's Representative services.



*Presentation to*

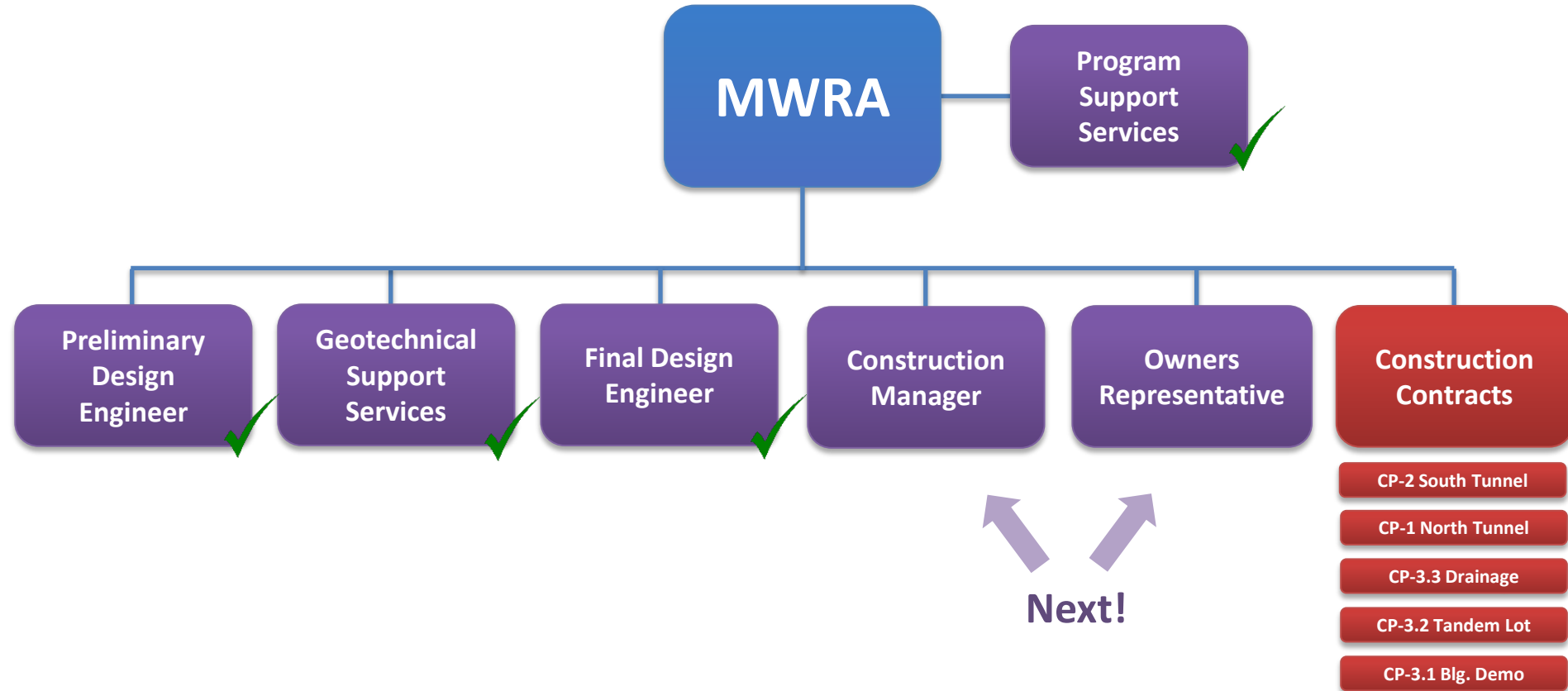
**MWRA Board of Directors**

***Tunnel Program Look Ahead***

July 23, 2025



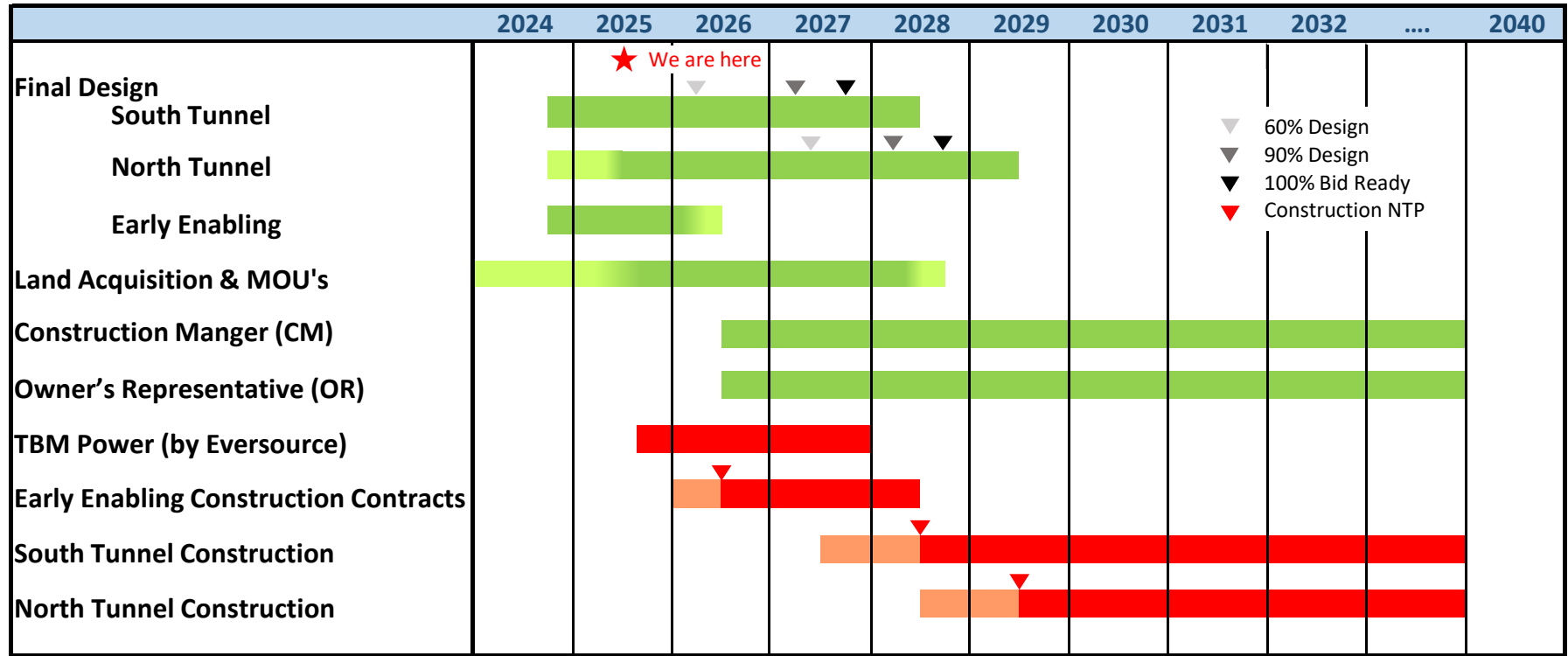
# Tunnel Program Organization







# Tunnel Program Schedule





# Construction Management Services (Contract No. 7356)

## Anticipated Scope of Services:

- Project Management
- Pre-Construction Support
  - Constructability Review
  - Cost Estimating and Scheduling Support
  - Safety Program Development
  - Value Engineering
- Construction Contract Administration
- Resident Engineer/Inspection Services
- Other Field Services
  - Independent Quality Assurance
  - Safety Program Compliance
  - Environmental Compliance & Site Control

## FY26 CIP:

- \$151.1M
- 2026 – 2038

## Planned Procurement Schedule:

- RFQ issued – July 2025
- RFP issued – October 2025
- NTP – April 2026





# Owner's Representative

## Mass General Law (MGL) Chapter 30, Section 39M1/2

### **Anticipated Scope of Services:**

- Peer review of engineering elements
- Oversight of cost recovery and value engineering
- Filing annual reports
- Independent of the designer, contractor, or subcontractor involved in the Tunnel Program (including CM)

### **FY26 CIP:**

- \$6.3M
- 2026 – 2038

### **Planned Procurement Schedule:**

- RFQ/P issued – December 2025
- NTP – May 2026



# Shaft Site Locations and Land Acquisition

- 13 shaft sites -
  - MWRA owns 3 shaft sites & has partial control of 2 shaft sites
  - Acquisition for 2 shaft sites require Article 97 Legislation
- Pipeline easements - ~6,000 lin ft
- Subterranean easements - ~600 individual properties
- Land acquisitions will be presented to the Board for approval

