



MWRA's Metropolitan Water Tunnel Program

Potential Natural and Cultural Resource

Environmental Impacts Fact Sheet

Through the Metropolitan Water Tunnel Program, the Massachusetts Water Resources Authority (MWRA) will construct two new water supply tunnels that will allow our aging existing water tunnel system to be rehabilitated without interrupting service. Implementing the Program will support the continued safety and redundancy of our water supply.

In accordance with the Massachusetts Environmental Policy Act (MEPA), MWRA carefully evaluated the potential impacts of this project to the environment. This *Fact Sheet* provides a description of the evaluation of potential impacts to natural and cultural resources and proposed mitigation strategies.

What is the Program's purpose and benefit?

The existing Metropolitan Tunnel System (City Tunnel, City Tunnel Extension, and Dorchester Tunnel) was constructed from the 1950s to the 1970s and has been in continuous service ever since. While the concrete-lined deep rock tunnels have a long design life, some of the associated valves and piping have exceeded their design life and are currently in poor condition. In order to maintain and replace some of these valves and piping without interrupting your water supply, a redundant system is needed.

The Metropolitan Water Tunnel Program will enhance the reliability of the Metropolitan Tunnel System that serves the metropolitan Boston area, allowing for system maintenance and repair without disrupting service. The primary goal of the Program is to protect public health, provide sanitation, and provide fire protection, in line with the mission of MWRA. Among other benefits, the Program is intended to:

- Provide redundancy for the Metropolitan Water Tunnel System, and provide the ability to perform maintenance on the existing tunnel system year-round;
- Provide uninterrupted service in the event of an emergency shutdown and meet high day demand flow with no seasonal restrictions;
- Preserve sustainable and predictable rates at the water utility level; and,
- Avoid boil water orders.

What is the Environmental Impact Review (EIR) process?

Prior to the EIR process, MWRA developed several alternatives, or options for where the new tunnel should be sited. During the EIR process, MWRA is conducting a comprehensive analysis of the Program's potential impacts and developing strategies to avoid, minimize, and/or mitigate any impacts to the environment and public health. The EIR evaluates the impacts that tunnel construction may have on the environment and public health either during construction (**construction impacts**) or after construction (**permanent impacts**). The EIR report will, in turn, be reviewed by federal, state, municipal agencies, and the public. The EIR will identify a preferred alternative for the tunnel that MWRA will advance into design, construction, and, ultimately, operation.

What parts of the Program's construction could impact the environment?

Most of the tunnel's construction will take place below the surface, as the tunnel boring machine (TBM) excavates through rock up to 400 feet underground. However, several shafts will connect the tunnel to the surface:

- **Launching** and **receiving shafts**, which will allow the TBM to enter and exit the tunnel; and,
- **Connection shafts**, which will provide important connections from the new tunnels to our existing water transmission system and to the local communities that we serve.

When identifying locations for the launching and receiving sites, MWRA focused on avoiding and minimizing environmental and public health impacts. Please see the *Site Selection Fact Sheet* for more information on that process.



Example of a tunnel boring machine

What are the potential environmental impacts and proposed mitigation strategies?

The EIR process identified several areas of potential impacts associated with environmental resources, specifically:

- **Rare Species and Wildlife Habitat.** No state-listed species are found near Program shaft sites and therefore would not be impacted during construction or permanently. During construction, the project may alter some plant and animal habitats, including potential Northern Long-Eared Bat and monarch butterfly habitat. To mitigate any impacts, the Program will comply with applicable Time of Year Restrictions on tree cutting and other measures specified in the applicable U.S. Fish and Wildlife Service 4(d) Rule for the Northern Long-Eared Bat.
- **Cultural and Historic Resources.** The only property expected to be impacted is the Walter E. Fernald State School, where three buildings—two staff residences (cottages) and a garage, all located at the southern edge of the campus, distant from its historic core—would be demolished. If mitigation is required, appropriate measures would be identified through coordination with the Massachusetts Historical Commission. There would be no temporary construction-period impacts on cultural and historic resources.
- **Hazardous Materials, Materials Handling, and Recycling.** Due to the Program's location in highly developed areas, contaminated soil or groundwater may be discovered during construction. The Program would ultimately have a positive effect on confirmed areas of soil and groundwater contamination within the area, since hazardous materials would be appropriately managed. Any hazardous soil or groundwater encountered during construction will not impact the tunnel once it is complete or have any impact on the quality of the drinking water.
- **Climate Change, Adaptation & Resiliency, and Sustainability.** Although it was not a regulatory requirement, MWRA voluntarily evaluated potential climate change-related risks and exposures for the Program. This evaluation found that the Program will positively impact the resiliency of the community to climate change, specifically by providing a more resilient water supply.
- **Community Resources and Open Space.** The Program's use of open space land and community resources has been minimized. Since the tunnel will pass deep beneath the ground surface, very little permanent impacts to above-ground conditions are expected. Permanent impacts to community and open space resources at the above-ground sites will be minimized.

Please see the *Transportation, Noise and Vibration/Air Quality*, and *Water Supply Fact Sheets* for information on those topics.

Impact Management Commitments

MWRA is committed to working with the community to manage any impacts related to the Program. As described in this *Fact Sheet*, the Program is intended to benefit the community by ensuring a resilient and reliable water system into the future with minimal environmental and public health impacts. Selecting the tunnel vastly decreases the amount of environmental and public health impact that would have otherwise resulted by constructing miles of pipeline close to the surface.



Example of launching shaft construction areas during and after construction



For more information about the Metropolitan Water Tunnel Program please visit www.mwra.com/mwotp.html or contact our Communications Team at tunnels.info@mwra.com.



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