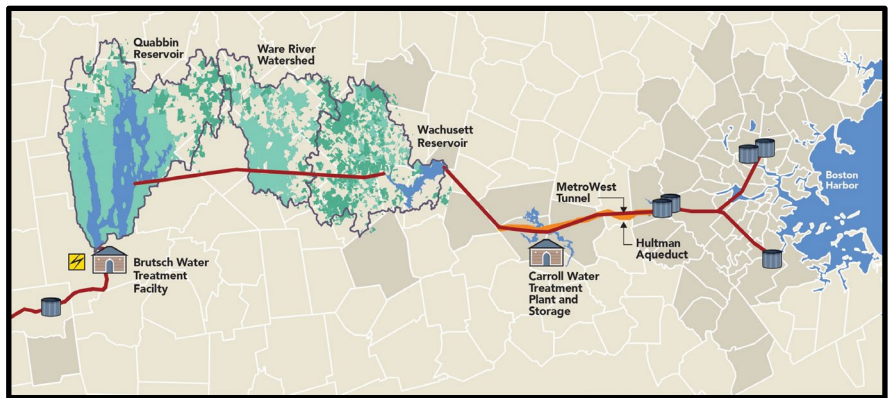




# About MWRA's Metropolitan Water Tunnel Program

Although best known for the successful cleanup of Boston Harbor, the Massachusetts Water Resources Authority (MWRA) also provides safe drinking water to over three million residents and 140,000 businesses in Massachusetts. Our water system dates back to the mid-1800s and has been continually expanded and improved upon for over 250 years. Our main water sources – the Quabbin and Wachusett Reservoirs – are located west of Boston in some of the most protected watersheds in Massachusetts. In 2019, our water was voted the best tasting in New England for the third time since 2011.

When it was created in 1984, MWRA inherited one of the country's great water systems; however, it had been neglected for decades. We have since invested heavily to modernize the water system, constructing a 17.6-mile water tunnel, a state-of-the-art water treatment plant and seven covered water storage facilities. We have also replaced or rehabilitated nearly 100 miles of water pipelines. In recent years, our focus has been ensuring redundancy to enable us to re-route water during maintenance and in the event of a break so that service is not interrupted. This work included the long overdue repair of the Hultman Aqueduct, new pipelines in parts of the service area that had single points of failure and a new emergency pumping station in Marlborough. Also, we have begun the initial design phase for two new water supply tunnels that will allow us to make repairs to our existing water tunnel system.



The MWRA Water Tunnel System

## **ABOUT THE METROPOLITAN WATER TUNNEL PROGRAM**

Through the Metropolitan Water Tunnel Program, MWRA will construct two new water supply tunnels that will allow our aging existing water tunnel system to be rehabilitated without interrupting service. The Program will provide complete redundancy for the existing Metropolitan Tunnel System, which includes the City Tunnel (1950), City Tunnel Extension (1963) and Dorchester Tunnel (1976). These tunnels deliver 60 percent of the water that travels eastward from the Quabbin Reservoir through a series of tunnels and aqueducts to our state-of-the-art water treatment plant in Marlborough that serves Boston and 44 Eastern Massachusetts communities.

These two new water supply tunnels – one to the North and one to the South of the Metropolitan Boston service area – will allow seamless continuation of water service while the existing Metropolitan Tunnel System is taken off line, inspected and rehabilitated.

## **WHY IS THIS PROGRAM NECESSARY?**

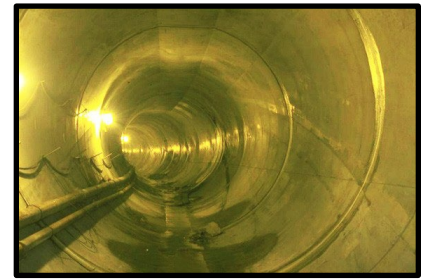
The existing Metropolitan Tunnel System has been in constant use for over 50 years. Today the tunnels, and the related surface piping and valves, cannot be taken off-line for inspection or repairs because they are critical for water transmission to Boston and surrounding communities, and because there is no redundant system to back them up. Without redundancy within this section of our water transmission system, a failure of a key component of the existing Metropolitan Tunnel System could trigger widespread and lengthy boil water orders, significantly reduced water delivery capacity or even the suspension of service until repairs are complete. The economic impact of a major failure of the MWRA's existing Metropolitan Tunnel System is estimated at over \$300 million per day. The potential public health, safety and economic impacts of a prolonged water outage for Eastern Massachusetts are immeasurable.



Tunnel valves in need of repair

## HOW WILL THE TUNNELS BE CONSTRUCTED?

We will primarily use Tunnel Boring Machines (TBMs) to mine two, approximately 10-foot diameter water tunnels. The tunnel mining work will take place in bedrock at an estimated depth of 200 to 500 feet underground. Once completed, the tunnel walls will be lined with concrete. The water will eventually travel through these deep tunnels to shafts, which will be located near the existing water pipelines. The water will flow through the new tunnels and up the new shafts to new valve chambers and ultimately connect with new piping to our existing system. Constructing deep rock tunnels instead of surface pipelines for this program dramatically reduces the potential impacts to communities associated with near-surface or open trench construction on city streets.

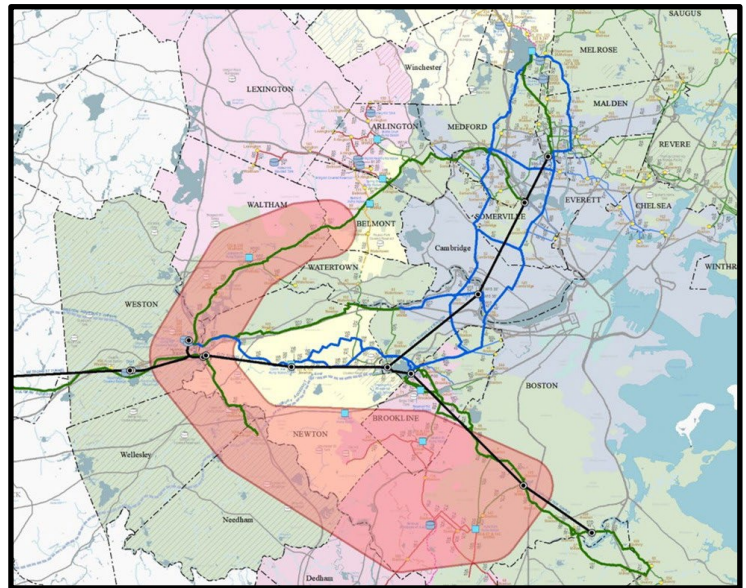


A completed water supply tunnel

Once the new tunnels are operational, components of the old tunnels can be inspected, repaired or replaced where necessary. Eventually, portions of the combined redundant tunnel system can be activated or deactivated as needed for maintenance and repair without causing major water service disruptions.

## WHERE WILL THE TUNNELS BE LOCATED?

The tunnels will begin in Weston, where they can be connected to the existing water system, with one running north to Waltham and the other running south to Mattapan. The exact location of the subsurface tunnels will not be determined until well into the design phase, but proposed shaft sites have been identified. MWRA will be working closely with the host communities to ensure minimal impact to residents and businesses along the routes.



Tunnel Alignment Study Area

## HOW WILL IT BE PAID FOR?

The MWRA has a core mission to provide reliable, cost-effective and high quality water, and a goal of maintaining sustainable and predictable rate assessments to our member communities. In keeping with this, the expected long-term rate impacts resulting from the Tunnel Program have been evaluated.

The final cost of the Tunnel Program is not yet defined because final design and construction are still years away with much work to do in the meantime. However, an estimated \$1.8 billion is being carried in our 2024 Capital Improvement Program Budget. The impacts of the estimated cost are included in MWRA's current rate projections.

## WHEN WILL THE WORK BEGIN?

The Metropolitan Water Tunnel Program is in the preliminary design and environmental review stage. Preliminary design will involve alternatives screening and evaluations, environmental assessment, permitting, base mapping, geotechnical investigation and preliminary design of the new tunnels. Final design will commence after preliminary design is complete, with tunnel construction planned to occur from approximately 2027 through 2038.



For more information about the Metropolitan Water Tunnel Program please visit [www.mwra.com/mwtp.html](http://www.mwra.com/mwtp.html) or contact our Communications Team at [tunnels.info@mwra.com](mailto:tunnels.info@mwra.com).

