

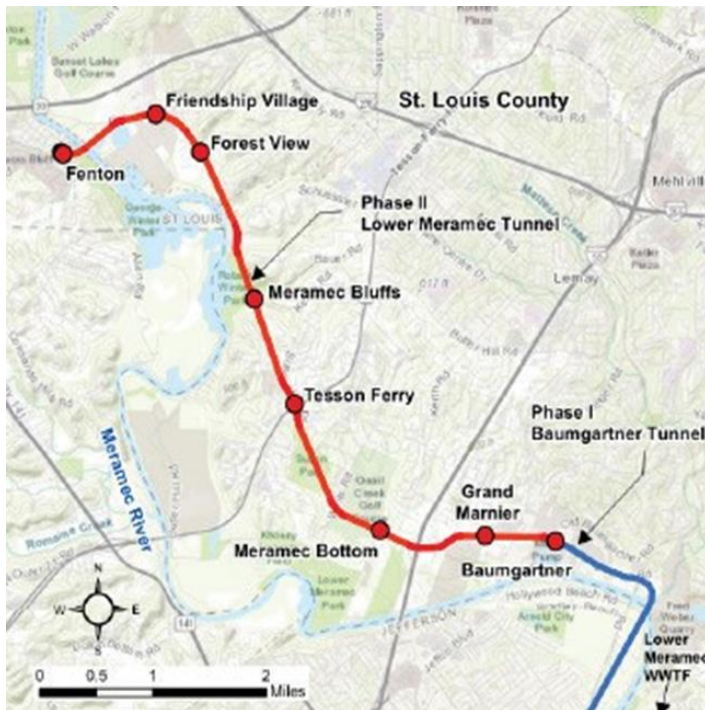
LOWER MERAMEC TUNNEL PROJECT



In 2012 the Metropolitan St. Louis Sewer District (MSD) embarked on a \$4.7 billion initiative to improve water quality and resolve many of the wastewater problems in St. Louis City and County. As is the case with many cities throughout the United States, the federal government required our region to develop a plan to reduce the volume of raw sewage that spills into our waterways as a result of older wastewater collection and treatment systems. MSD has divided this multi-year, multi-billion dollar investment into numerous projects that will be designed and constructed over the next several decades. The Lower Meramec Tunnel is one of the largest of these projects and will help fulfill a regional treatment plan dating back to the 1970s in the South County area.

Lower Meramec River System Improvements Project

Phase II of the Lower Meramec River System Improvements Project, also known as the Lower Meramec Tunnel (LMT), consists of a 6.8-mile long tunnel for an 8-foot diameter sanitary sewer pipe, located 78 to 286 feet below the ground.



The LMT is part of MSD's Project Clear, a program planned to span 23 years to improve water quality throughout MSD's service area. The tunnel's main objective is to intercept flows and to take offline the interim Fenton Wastewater Treatment Facility (WWTF). The project extends from the Phase I tunnel, off Baumgartner Road to the Fenton WWTF which is in Olde Towne Fenton. The Lower Meramec Service Area currently collects wastewater through a series of pump stations, force mains, and sanitary sewers. Treatment for the service area will be provided at the Lower Meramec WWTF, which is located near the confluence of the Meramec and Mississippi Rivers. The current system is aging and is overloaded during wet weather.

The existing system will be replaced with a deep tunnel designed to collect and transport sewage. The design also includes new sewers and drop shafts to divert flows into the tunnel.

THE LOWER MERAMEC TUNNEL

- Estimated Construction Cost: \$175 million
- Anticipated Construction: 2020 through 2024
- Design Engineers: HDR Engineering, Inc. & WSP USA, Inc.
- Contractor: SAK Construction
- Construction Manager: Black & Veatch

TUNNEL BENEFITS

- Allows for elimination of a flood prone treatment facility and numerous pump stations
- Improves water quality and public health
- Minimal disturbances to neighboring private and public properties

Building the Underground Facility

The tunnel is 185 feet below the ground surface at the Baumgartner Shaft site. To reach that depth the construction team will use the Baumgartner Construction Shaft that was constructed during Phase I of the project in the early 2000's. The construction shaft is located at the downstream end of the tunnel near Lemay Ferry and Baumgartner Road.



The Tunnel Boring Machine (TBM) used to excavate the tunnel will be lowered into this shaft. These machines are designed to bore through the limestone, creating the 11-foot diameter opening. The photo to the right depicts a TBM similar to the one that will be used to excavate the LMT tunnel. The rock material will be hauled out of the Baumgartner Construction Shaft and used to fill the lagoon that used to treat wastewater at the Baumgartner site. A 30-foot diameter shaft will be excavated at site of the Fenton Wastewater Treatment Facility to allow the TBM to be removed from the tunnel.

Directing Residential and Commercial Wastewater Flow into the Tunnel

This project will construct six structures to collect sanitary sewage flows and divert that flow to the tunnel for conveyance to the Lower Meramec Wastewater Treatment Facility for processing. While most of the tunnel construction takes place underground and is not visible, construction of the diversion structures occurs near the surface and will be visible. The six structures and their locations are:

- Grand Marnier – 4139 Meramec Bottom Road. This structure will replace an existing pump station at this site.
- Meramec Bottom – 4675 Meramec Bottom Road. A future project will connect a sewer to this structure.
- Meramec Bluffs – 10400 Bauer Road. A future project will connect a sewer to this structure.
- Forest View – Adjacent to 10911 Gravois Industrial Court. This structure will replace an existing pump station at this site.

- Friendship Village – At Gravois Road and Rahning Road. A future project will connect a sewer to this structure.
- Fenton – At the location of the Fenton Wastewater Treatment Facility on Opps Lane. The shaft used to retrieve the TBM will be constructed at this site. A diversion structure will divert the flow currently treated at the Fenton Wastewater Treatment Facility into the tunnel at this site.

Construction activity at these sites will consist of constructing shafts from the surface to the elevation of the tunnel. Concrete structures will be constructed approximately 30 feet below ground at each of the sites. These structures will connect to sewers and divert the flow from these sewers and direct it to the drop shaft where it will fall and enter the tunnel.

BLASTING

Blasting will be used to excavate through the rock at the location of the Fenton shaft and to expand the size of the Baumgartner construction shaft and tunnel to provide room to install the TBM. Blasting may also be used to excavate the below ground adits that connect the main tunnel to each of the diversion structures.

- Prior to the initial start of blasting activities, nearby property owners will be offered an inspection of their property, which will document the conditions before any blasting occurs within 500 feet of the property
- Blasting may occur twice a day during excavation of the shafts, each blast takes about eight seconds
- Before each blast, a blasting signal will be sounded to alert the community that a blast is about to happen.
- The noise and minor vibration from the blasting may be noticeable up to about a half-mile
- No blasting will occur after 6:30 PM or on Sunday



WHO TO CONTACT?

Questions or concerns about construction should be directed to John Deeken at (636) 536-5825 during normal business hours. If there is an emergency, please call 911!

For more information about the overall Project Clear program visit:
<https://msdprojectclear.org/>