JEFFERSON BARRACKS TUNNEL

MSD Project Clear is the Metropolitan St. Louis Sewer District's (MSD) initiative to improve water quality and alleviate many wastewater concerns throughout St. Louis City and County. MSD Project Clear is a long-term effort by MSD, undertaken as part of an agreement with the U.S. Environmental Protection Agency and the Missouri Coalition for the Environment. Project Clear aims to improve water quality for everyone, solve problems for some customers created by the very nature and design of St. Louis' wastewater system, and provide clear, up-to-date information to the public.

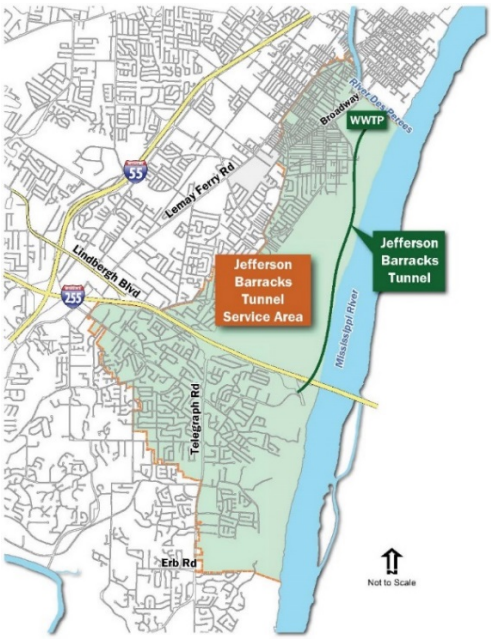
MSD Project Clear will invest billions of dollars over a generation in planning, designing, and building community rainscaping, system improvements, and an ambitious program of maintenance and repair. At times of heavy wet weather, the sewer system of St. Louis City and much of St. Louis County can be overwhelmed, causing overflows into area rivers and streams. Like many cities throughout the United States, this program is designed to reduce the occurrence of sewer overflows that result from older wastewater collection and treatment systems during heavy storms. MSD Project Clear has divided this multi-year, multi-billion-dollar investment into numerous projects that will be designed and constructed over the next several decades. The Jefferson Barracks Tunnel project, for example, will address sewer overflows in the Lemay/South County area.

Jefferson Barracks Tunnel Project

The Jefferson Barracks Tunnel project extends from just south of I-255 at Koch Road to the Lemay Wastewater Treatment Plant (WWTP) located at the confluence of the River des Peres and the Mississippi River. The Jefferson Barracks Tunnel service area currently conveys and collects wastewater through a series of pump stations, force mains, sanitary sewers, and combined sewers. Treatment is provided at the Lemay WWTP. The existing system cannot handle current volumes and can be overloaded during wet weather, contributing to sewer overflows.

To alleviate these issues, a new deep tunnel will be built along with a new pump station and combined sewers. The deep tunnel will replace the existing trunk sewer and allow for elimination of two intermediate pump stations.

The Jefferson Barracks Tunnel project consists of a 17,800-foot long tunnel, lined with a 7-foot diameter fiberglass pressure pipe and containing instrumentation conduits; an 88-foot diameter launch shaft, and a 28-foot diameter recovery shaft. Seven new intake structures will be constructed along the alignment to convey sewage to the tunnel and site work including construction of a large engineered fill utilizing the rock excavated from the tunnel and shaft. The new pump station and sewer work will be a separate contract following the tunnel construction.



Jefferson Barracks Tunnel Construction Activities

MSD awarded the $63.3 million construction contract for the Jefferson Barracks Tunnel to SAK Construction in early 2017. Construction began in March 2017 and will continue through to Spring 2020. Some construction activities will have direct impacts for those living, working, and visiting the community in the area of the project. As of October 1, 2018, the overall project is about 33 percent complete.

DIGGING THE TUNNEL

The tunnel will range from about 120 to 220 feet below the ground surface and parallel the Mississippi River from the Lemay WWTP to Koch Road, just south of Interstate 255. Tunnel excavation will proceed from the main construction shaft to the upstream termination shaft at Koch Road.

The main construction shaft is located on the former Defense Mapping site (near S. Broadway and River City Casino Boulevard) and MSD's Lemay WWTP site and will later serve as the location of a new pump station. Karst conditions are present at the shaft which contributes to a variable depth of bedrock being present. Pre-excavation grouting was performed to limit the potential for large groundwater flows into the shaft due to the karst conditions.

A secant pile wall was constructed and extended into bedrock for support of the overburden materials at the shaft. Excavation of the overburden soils began in late April 2018 using a tracked excavator. Drill and blast methods are being used to break the underlying bedrock into pieces small enough to be removed by a tracked excavator, buckets, and crane. Once complete, the shaft will be about 88 feet in diameter and 166 feet deep. Completion of shaft excavation is anticipated in early October

2018. A starter tunnel was also excavated by drill and blast methods during shaft excavation. The starter tunnel will serve to launch the tunnel boring machine (TBM) for excavation of the 11-foot diameter tunnel.

INTAKE STRUCTURE SITES

Seven intake structures will be constructed along the alignment to convey sewage to the tunnel. These include the following:

- Huntsman Intake – MSD Lemay WWTP
- Notre Dame Intake – Notre Dame High School
- County Park Intake – Jefferson Barracks Park
- Grant Road Intake – Jefferson Barracks Park
- Smith Road Intake – Jefferson Barracks Military Post
- Kearney Street Intake - Jefferson Barracks Military Post
- Koch Road Intake – South of I-255

Excavation for the Koch Road intake will also serve as the termination shaft for the tunnel. This shaft will have a finished diameter of 18 feet and be about 135 feet deep.

CURRENT CONSTRUCTION STATUS

Pre-excavation grouting for the main construction shaft was completed in October 2017, with construction of the secant pile wall and a cast-in-place wall atop the secant piles completed in in early 2018. The cast-in-place wall allows for fill placement around the shaft so the area around the shaft can be raised to its finished grade.

Excavation for the main construction shaft began in April 2018 and is anticipated being completed in early October 2018. Excavated materials remain on the former Defense Mapping site and are placed to raise the grade of the site.

Main Construction Shaft


Grant Road Drop

Work at the intake sites began in early 2018 and will continue throughout the remainder of 2018. Work has included site preparation, drilling of drop and vent shafts which will connect intake structures to the tunnel, and installation of drop and vent shafts at each of the sites.

Installation of the soldier pile and lagging retaining wall at the Koch Road site began in early 2018 and was completed in July 2018. The wall allows for the site grade to be lowered for construction of the termination shaft and intake structure.


Koch Rd Site

WHAT TO EXPECT NEXT

Excavation of the main construction shaft will be completed in early October 2018 using drill and blast methods to remove the bedrock. Once complete, the shaft will be backfilled to the level of the starter tunnel, and the TBM will be brought to the site and assembled.

Preparation of the shaft and starter tunnel and TBM assembly is anticipated taking 6 to 8 weeks with TBM mining starting once assembly is complete. Mining is scheduled to occur 5 days a week with 2 shifts per day. The public is not expected to be impacted from the mining operation as the work will occur below ground and material excavated from the tunnel will stay on the former Defense Mapping site and be placed as fill.

Work at the intake sites will continue through the remainder of 2018 and into 2019 and include construction of the intake structures.

Shaft excavation at the Koch Road site will include excavating the soil overburden using a tracked excavator followed by drill and blast methods to break up the bedrock for excavation. Shaft excavation is expected to start in October 2018 and last into 2019. Temporary closures of Koch Road (between Kinswood Lane and Robert Koch Hospital Road) and Robert Koch Hospital Road (between Oakville Elks Lane and Koch Road) will be required during blasting and are expected to last between 5 and 10 minutes for each blast.

WHO TO CONTACT

Questions or concerns about construction should be directed to Pat Kinsella at (314) 750-2001 during normal business hours between 7:00 AM and 3:30 PM. If there is an emergency please call 911!