

LOWER & MIDDLE RIVER DES PERES (LMRDP) CSO STORAGE TUNNEL PROJECT



In 2012, the Metropolitan St. Louis Sewer District (MSD) launched MSD Project Clear, an initiative

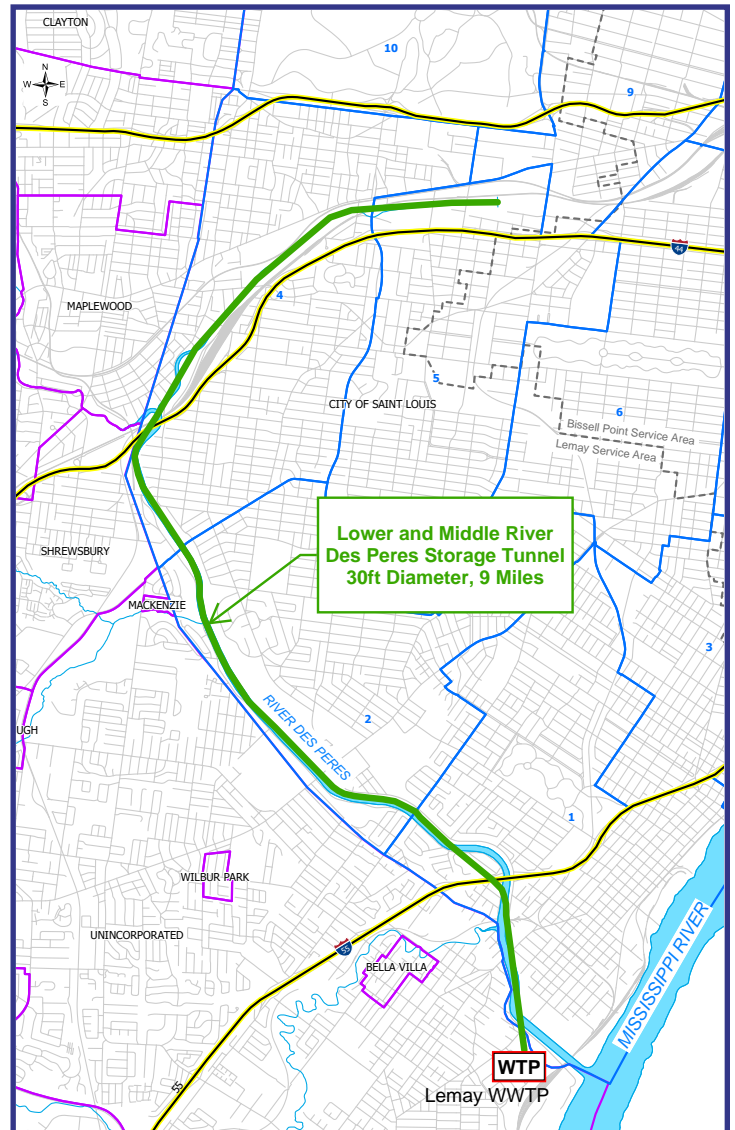
to improve water quality and alleviate many wastewater concerns in the St. Louis region. MSD Project Clear is a long-term effort by the Metropolitan St. Louis Sewer District, undertaken as part of [an agreement](#) with the U.S. Environmental Protection Agency and the Missouri Coalition for the Environment. MSD Project Clear will invest billions of dollars over a generation in planning, designing, and building community rain-scaping, system improvements, and an ambitious program of maintenance and repair. At times of heavy precipitation, 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 Lower & Middle River des Peres (LMRDP) tunnel project is the largest of these projects and will address an aging system in the South St. Louis City and adjacent St. Louis County areas of the Region.

Reducing Sewer Overflow into the River des Peres

The Lower and Middle RDP CSO Storage Tunnel project is located within the Lemay Service Area. Currently, all dry weather flows and a significant portion of wet weather flows are intercepted and sent for treatment to the Lemay Wastewater Treatment Plant (WWTP). Unfortunately, during heavier rainfalls overflows continue to occur. The excess flow, called combined sewer overflow (CSO), is discharged directly to the RDP through 47 outfall pipes.

The purpose of this project is to reduce these overflows into the River des Peres by capturing much of the excess sewage and stormwater flow during heavy rains and storing it until it can be treated. The project includes a 9-mile long, 30 to 32 foot diameter CSO Storage Tunnel. The project also includes a pump station to pump captured combined flow to Lemay WWTP and a high-rate treatment system to supplement the treatment provided at Lemay WWTP during wet weather.

Over the next generation, MSD Project Clear will utilize several project types, including storage tunnels like this one, to greatly reduce the occurrence of overflows in the St. Louis and St. Louis County areas of the region.



THE RIVER DES PERES TUNNEL – PROJECT BENEFITS

- Improves water quality and public health
- Captures sewage during heavy rains, reducing overflows to the River des Peres and its tributaries
- Stores sewage during heavy rains until it can be treated
- Minimal disturbances to neighboring properties

THAT'S ONE BIG TUNNEL!

The tunnel alignment begins adjacent to the Lemay WWTP and generally runs within or parallel to the River des Peres right-of-way to its terminus in the vicinity of Macklind Avenue. It will be the largest storage tunnel in the Project Clear Program.

- **How Long?**
9 miles! That's the length of 150 football fields.
- **How Big?**
30 to 32 feet in diameter! You can fit a small city inside.
- **How Deep?**
200 – 250 feet below the surface! The height of a 20 story building
- **How much rock will need to be removed?**
1.5 million cubic yards!



"Hole through" or the completion of mining of a large CSO tunnel.

A BIG MACHINE FOR A BIG JOB!

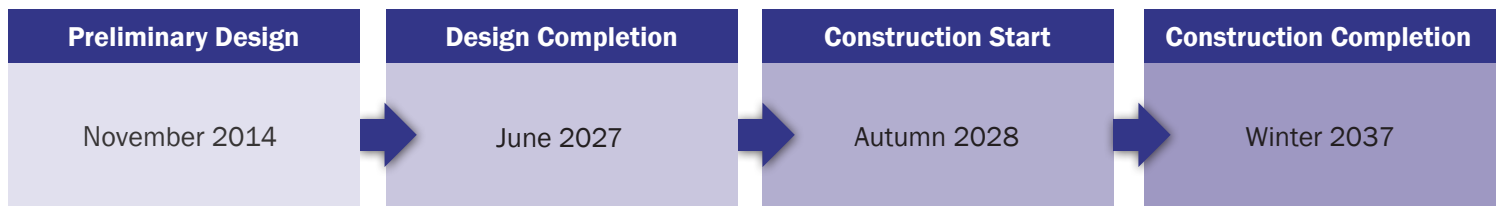
To build a tunnel of this size requires a very special machine. Tunnel Boring Machines (TBMs) come in all sizes and this project will need a very large one to mine the River des Peres tunnel. A TBM by the name of "Chelsea" recently completed digging a tunnel for the Lemay Redundant Force Main. Weighing in at 300,000 lbs., Chelsea was a very large machine, but the TBM needed for the River des Peres tunnel will have to be much BIGGER. Here's why:

	Chelsea's Work Demands	RDP TBMs Work Demands
Tunnel diameter	11 ¼ feet	33 feet
Tunnel length	3,028 feet	46,000 feet
Length of TBM	250 feet	Over 300 feet



Large-diameter TBM with the "business end" or cutter head at left, and the support or "trailing" gear behind it.

TIMELINE

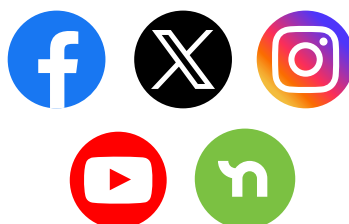


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