

St. Louis MSD Project Clear

LMRDP CSO Storage Tunnel

URDP and RDP Tributaries Storage Tunnel

Patricia Pride – MSD Project Clear

Andrew Bursey, Emily Thompson, Colin Sessions – Jacobs

Agenda



MSD and Project Clear



Tunnel Project Status



**Lower & Middle River Des Peres CSO Storage Tunnel
(LMRDP Tunnel)
— MSD 11820**



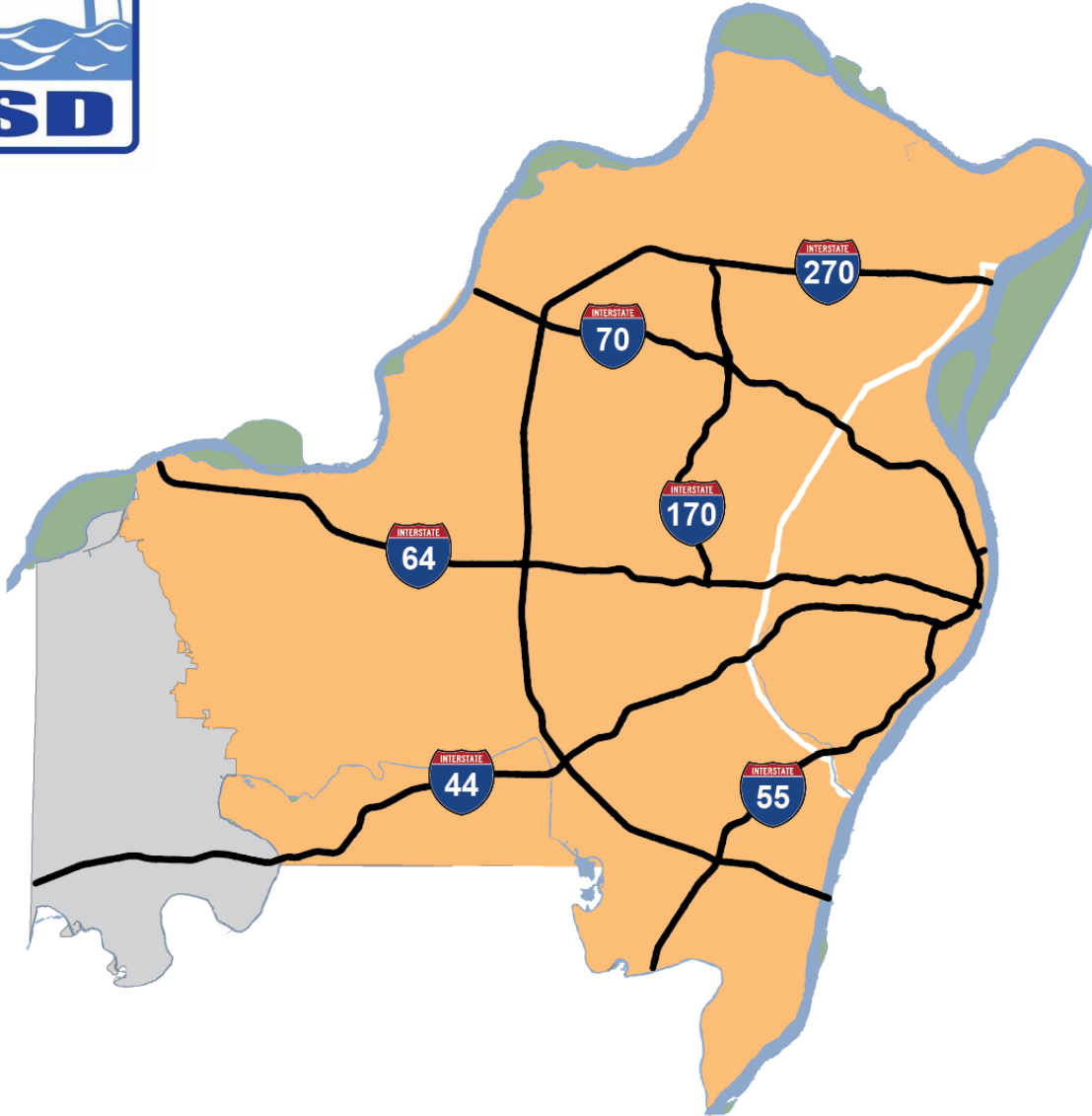
**Upper River Des Peres and River Des Peres
Tributaries Storage Tunnel (Tribs Tunnel)
— MSD 12441**



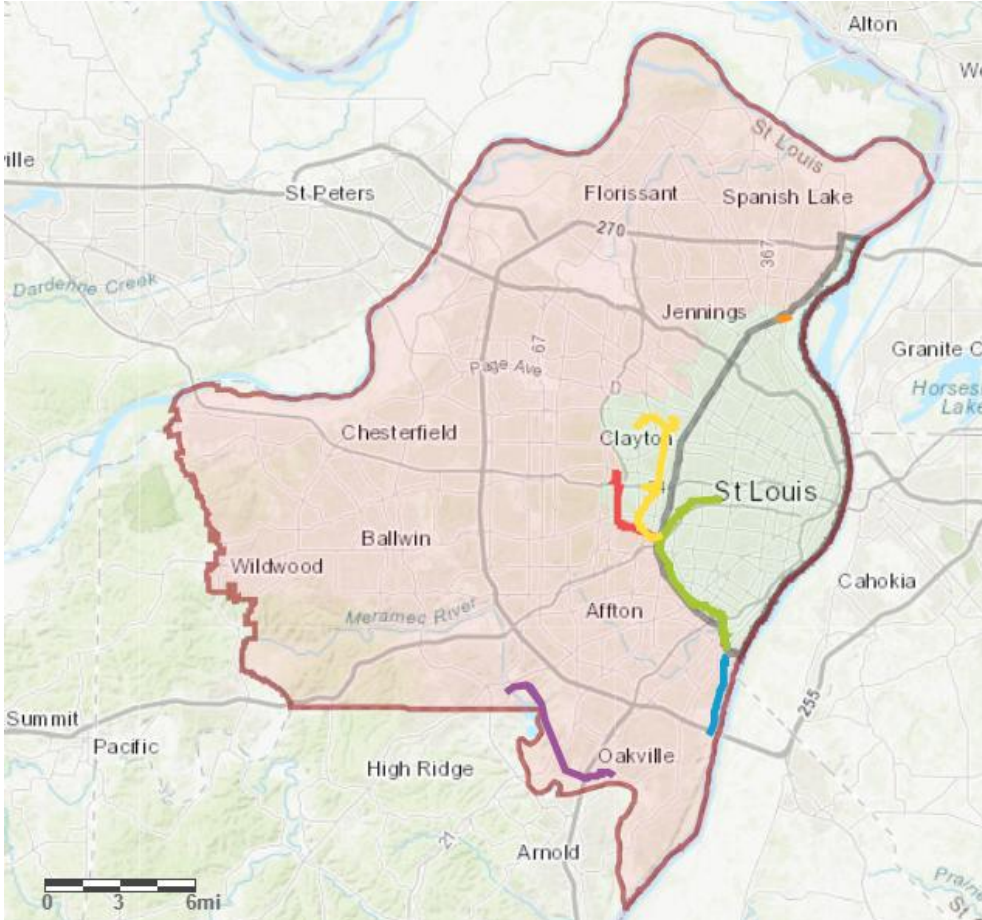
Timeline



Metropolitan St. Louis Sewer District



-  Formed in 1954
-  87 municipalities
-  4th largest sewer system in USA
-  520 square mile service area
-  Approx. 1.3 million customers
-  10,000 miles of sewers
-  > 350 MG treated per day
-  7 treatment plants



Locations of Major Tunnels

- 💧 \$7.2B, 28-year initiative to improve water quality and reduce wastewater overflows
- 💧 7 major tunnel projects
- 💧 5 projects complete
- 💧 2 largest projects to bid 2027 and 2029

Two Largest Projects

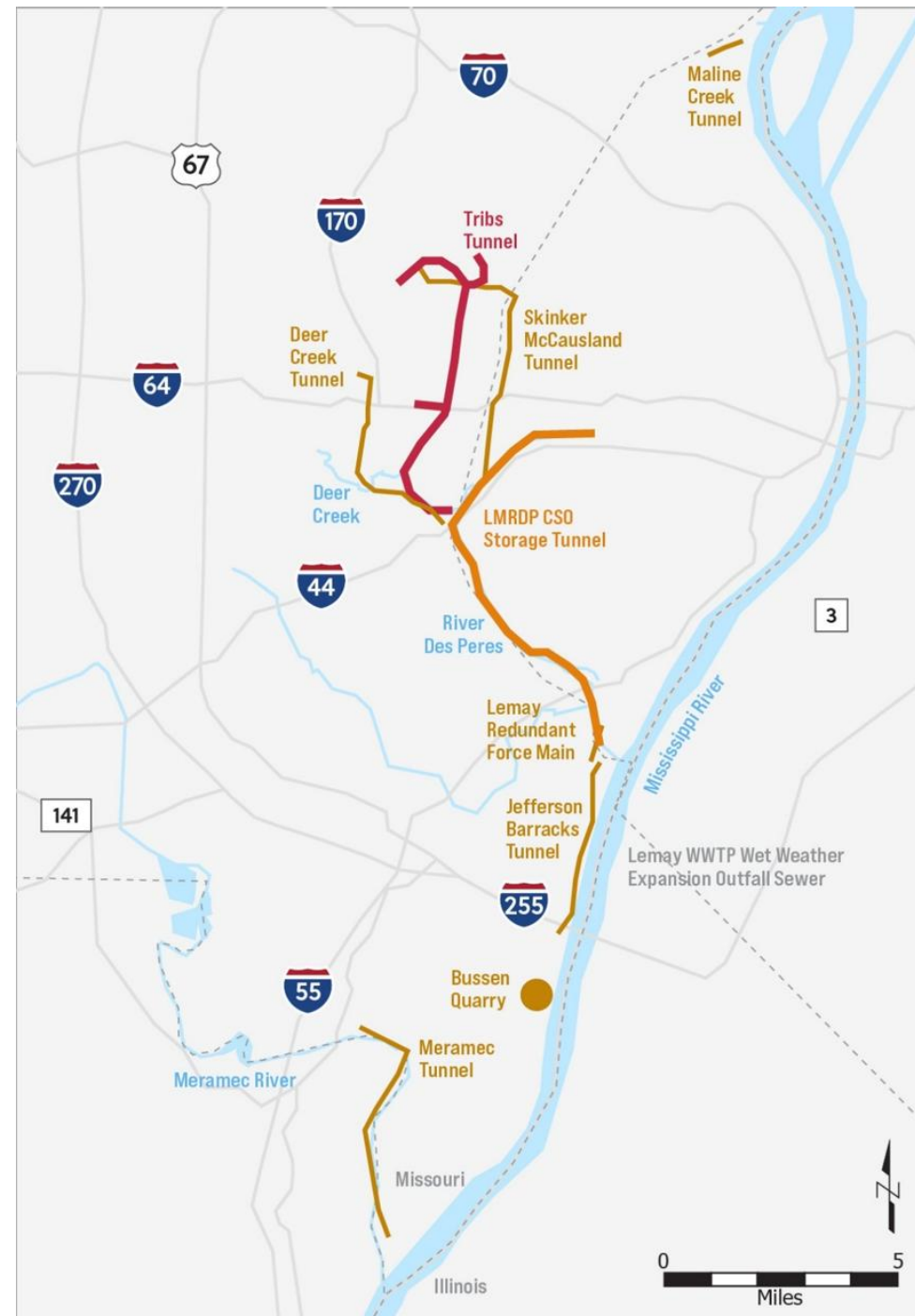


LMRDP CSO Storage Tunnel



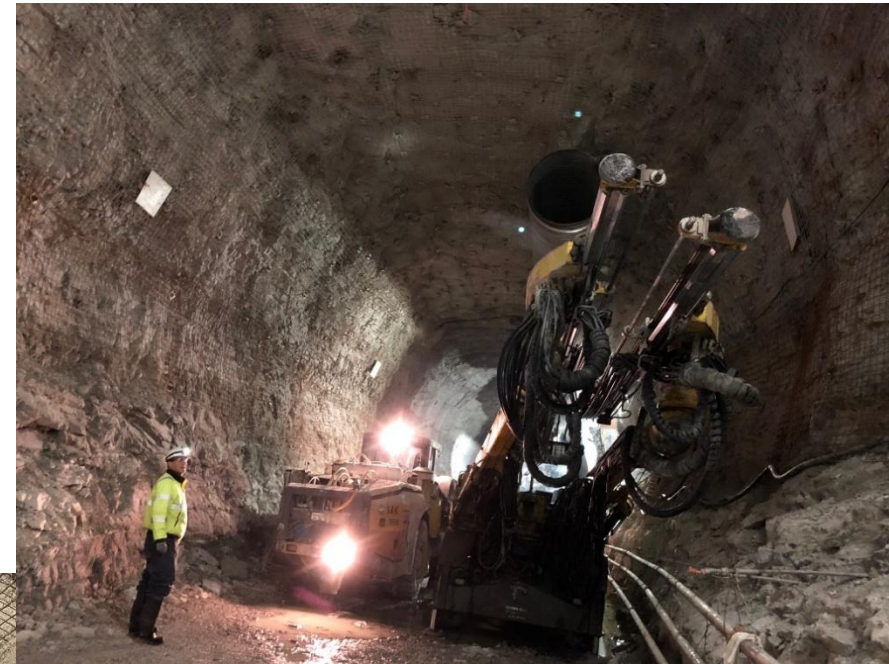
Upper River Des Peres and River Des Peres Tributaries Storage Tunnel

Locations of Major Tunnels



Completed Tunnel Projects

- Lemay Redundant Forcemain Tunnel (2014)
- Maline Creek Local Storage Facility (2020)
- Deer Creek Sanitary Tunnel and Pump Station (2023)
- Jefferson Barracks Tunnel (2024)
- Lower Meramec Tunnel (2026)



Maline CSO Storage Facility
Cavern Excavation



Lower Meramec Tunnel TBM



Jefferson Barracks Tunnel

St. Louis Area Geology

Bedrock

- Limestone and dolomite
- Shale layers
- Karstic and slabby zones (shallow)

Soil deposits



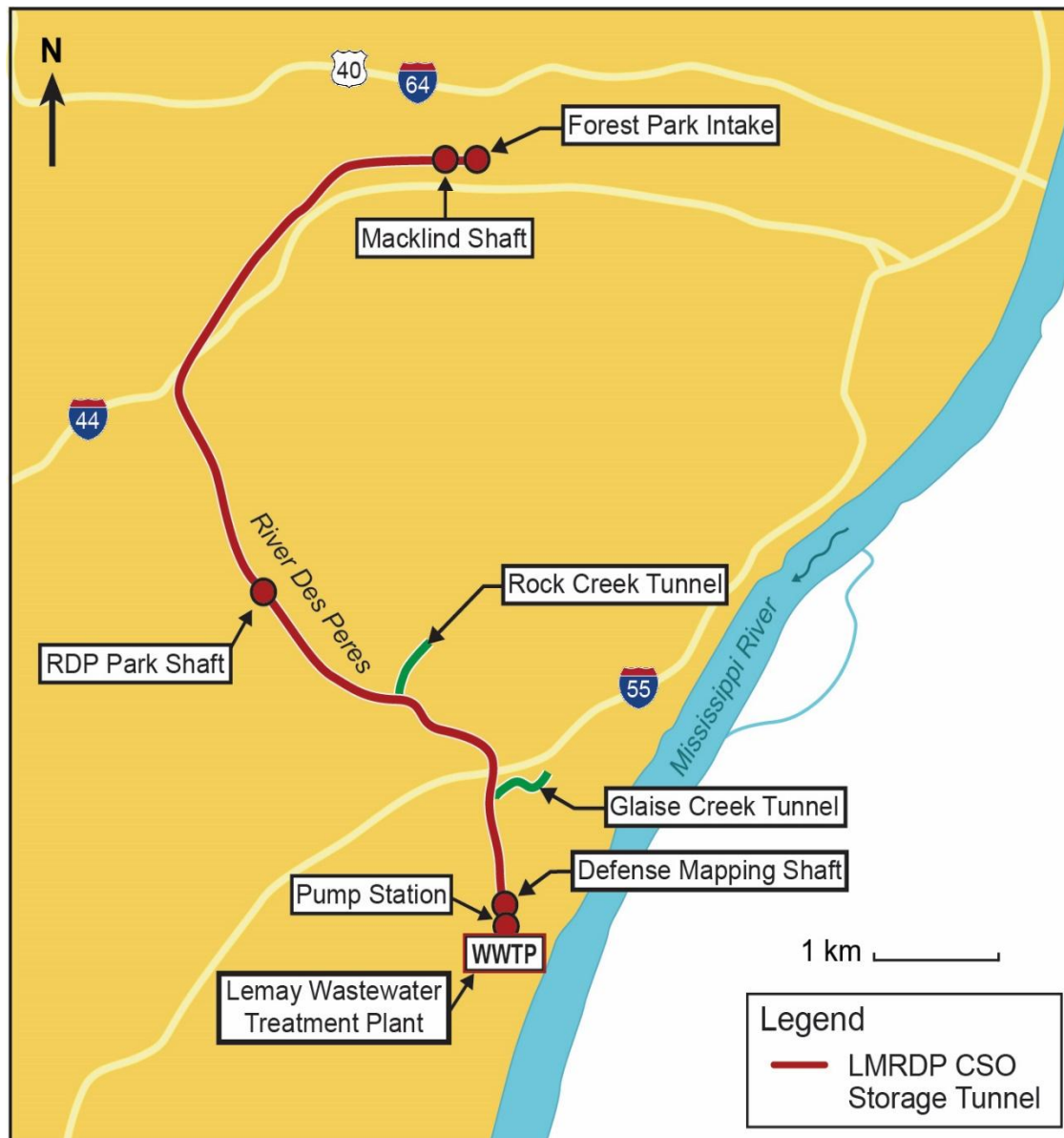
Limestone and dolomite beds

Bedrock



Lemay No. 3 Pump Station Shaft Excavation, Lemay WWTP. Adjacent to LMRDP Pump Station Site.

LMRDP CSO Storage Tunnel: Alignment and Shafts



Tunnel Alignment

- North End: Forest Park Site RDP Tubes
- Intermediate: RDP Park
- South End: Former Defense Mapping Site
(Lemay WWTP/Pump Station Site)

Main Tunnel Shafts

- Macklind (45 ft)
- RDP Park (45 ft)
- Defense Mapping (45 ft)
- Pump Station North Access (30 ft)
- Pump Station South Access (50 ft)

Other Major Shafts

- Forest Park Intake (20 ft)
- Wherry Creek (12 ft)
- Alaska Park (18 ft)
- Rock Creek (18 ft)
- Emergency Overflow (20 ft)

Lower & Middle River Des Peres CSO Storage Tunnel — MSD 11820

Storage tunnel with 34 intakes and pump station cavern

Main Tunnel

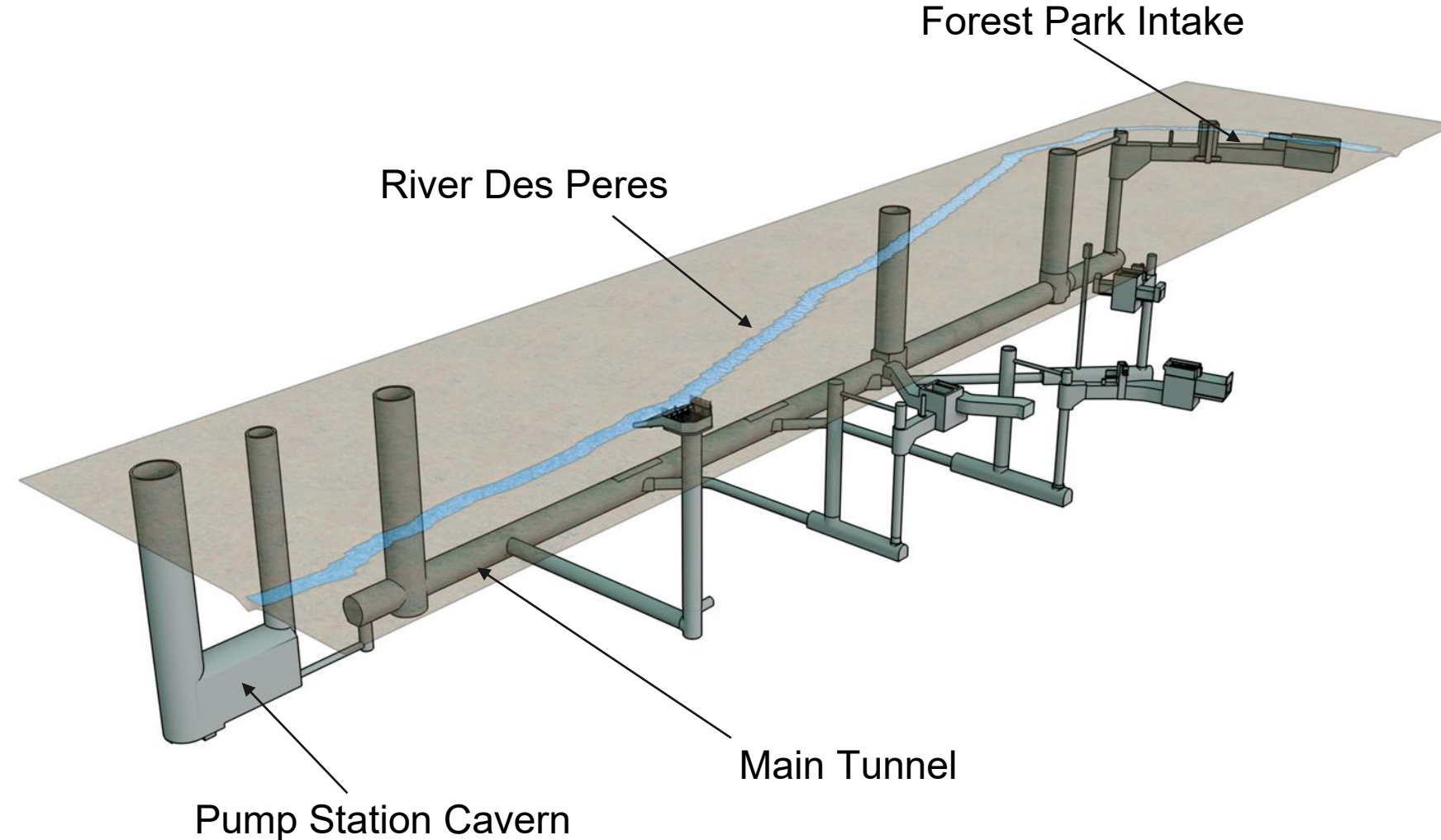
- 9 miles long
- Main beam rock TBM
- 30-foot dia. (CIP)
- 3 – 45-foot dia. construction shafts

Forest Park Intake

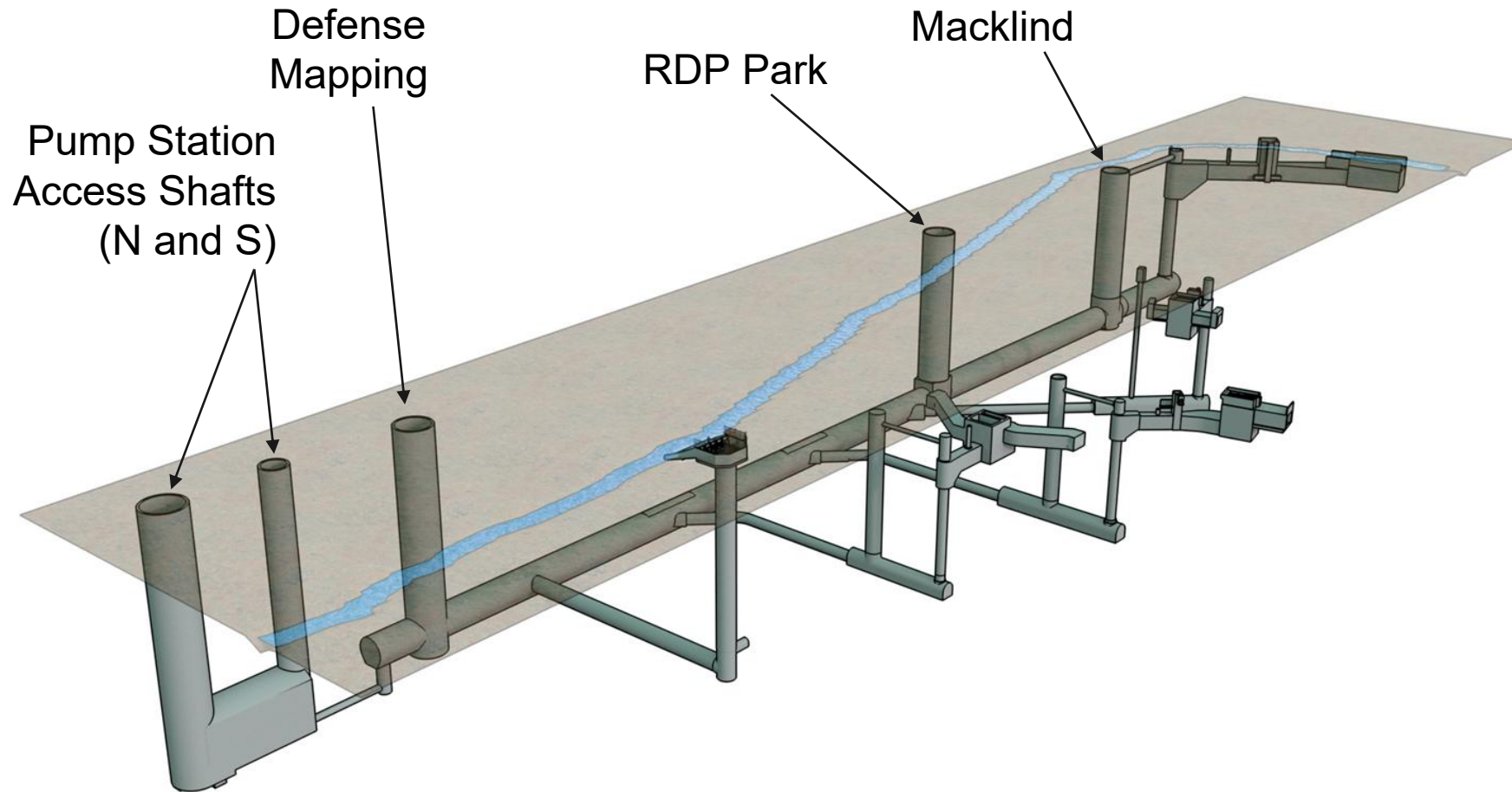
- 4,400 MGD capacity
- Large tangential vortex

Pump Station Cavern

- 100 MGD Pump Station
- Former Defense Mapping Site



Lower & Middle River Des Peres CSO Storage Tunnel



Main Shafts

- Construction shafts (3)
- Pump Station Shafts (2)

Intakes

- 34 Intakes
- Dropshafts/vent shafts

Lower & Middle River Des Peres CSO Storage Tunnel

Intakes

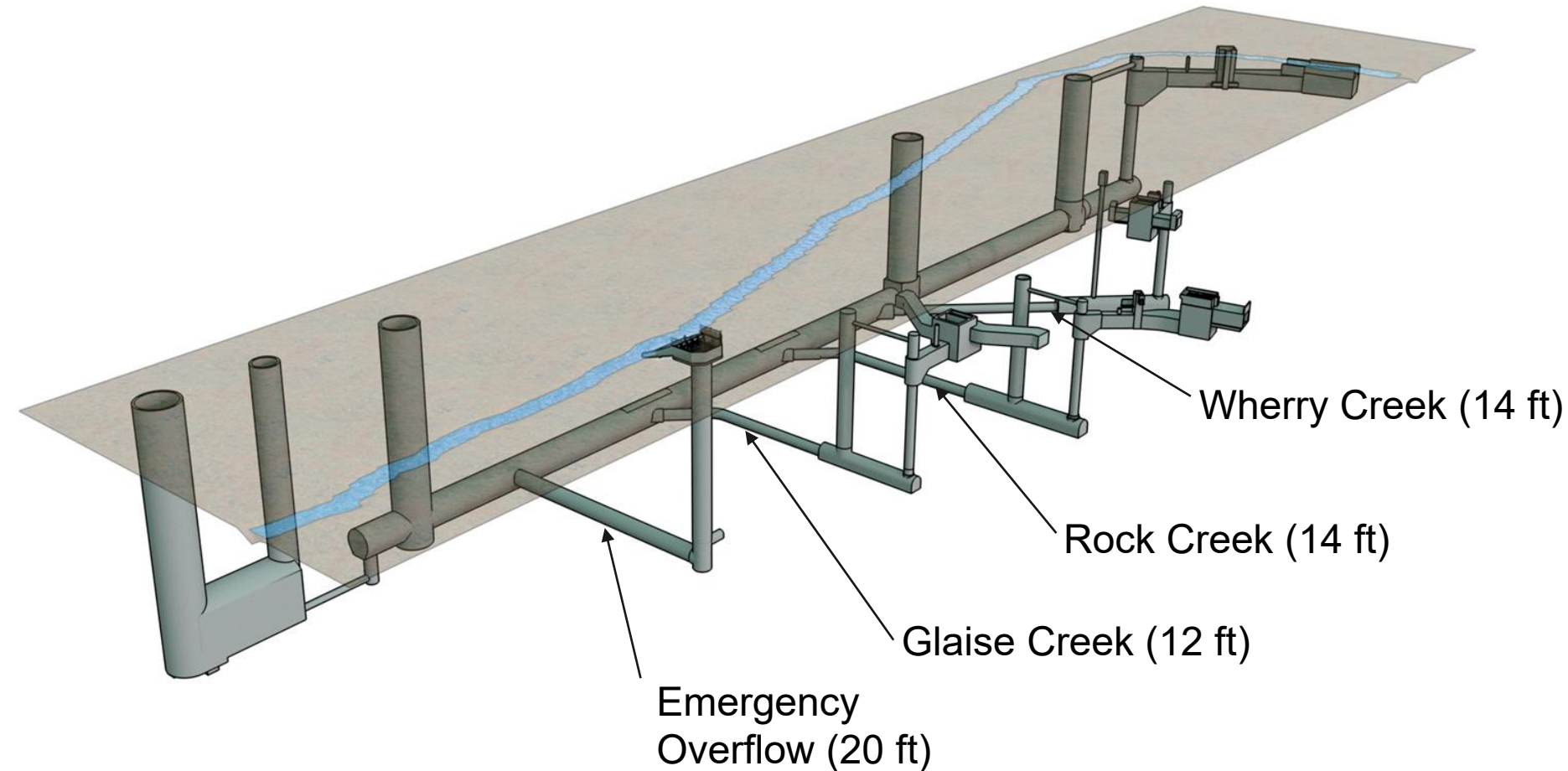
- Surface structures
- Drop/vent shafts
- Deaeration chambers
- Forest Park chamber: 36 ft dia.

Connecting Tunnels

- Glaise Creek
- Rock Creek
- Wherry Creek
- Smaller diameter tunnels

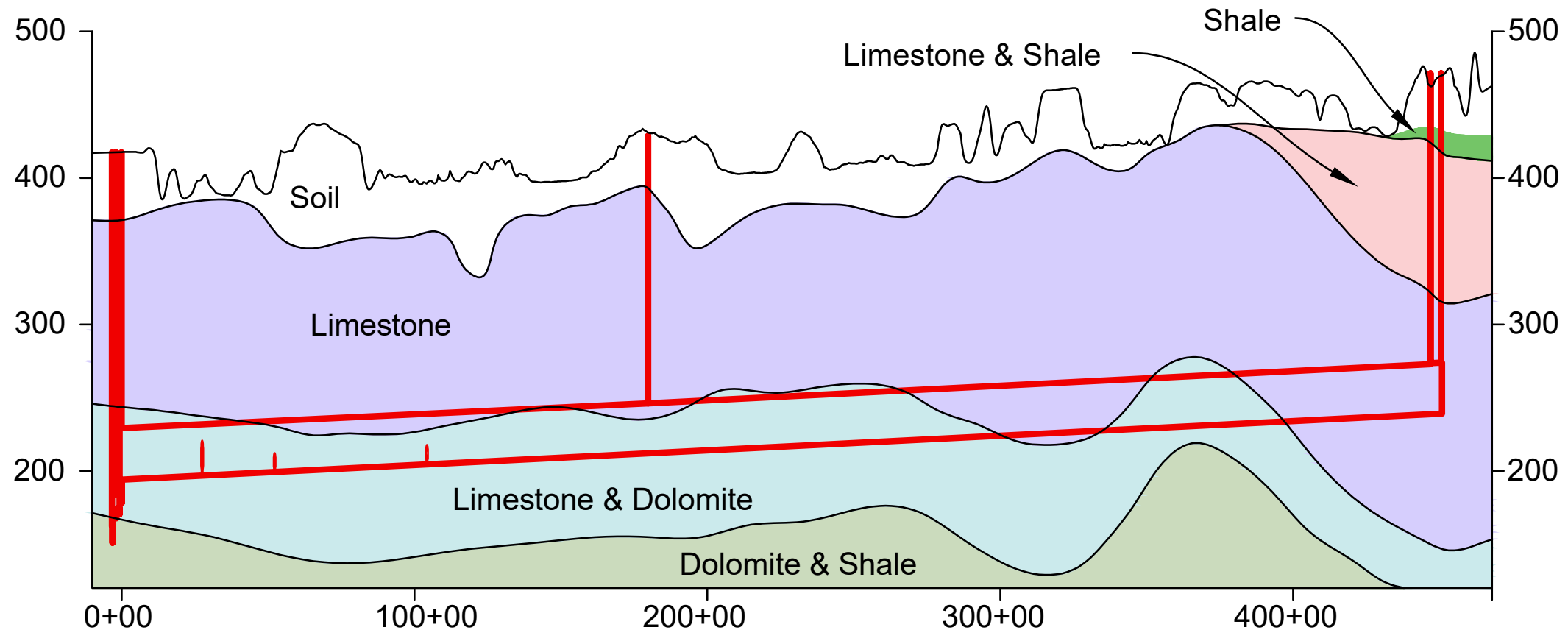
Emergency Overflow

- Spillway
- Shaft
- Connecting Tunnel

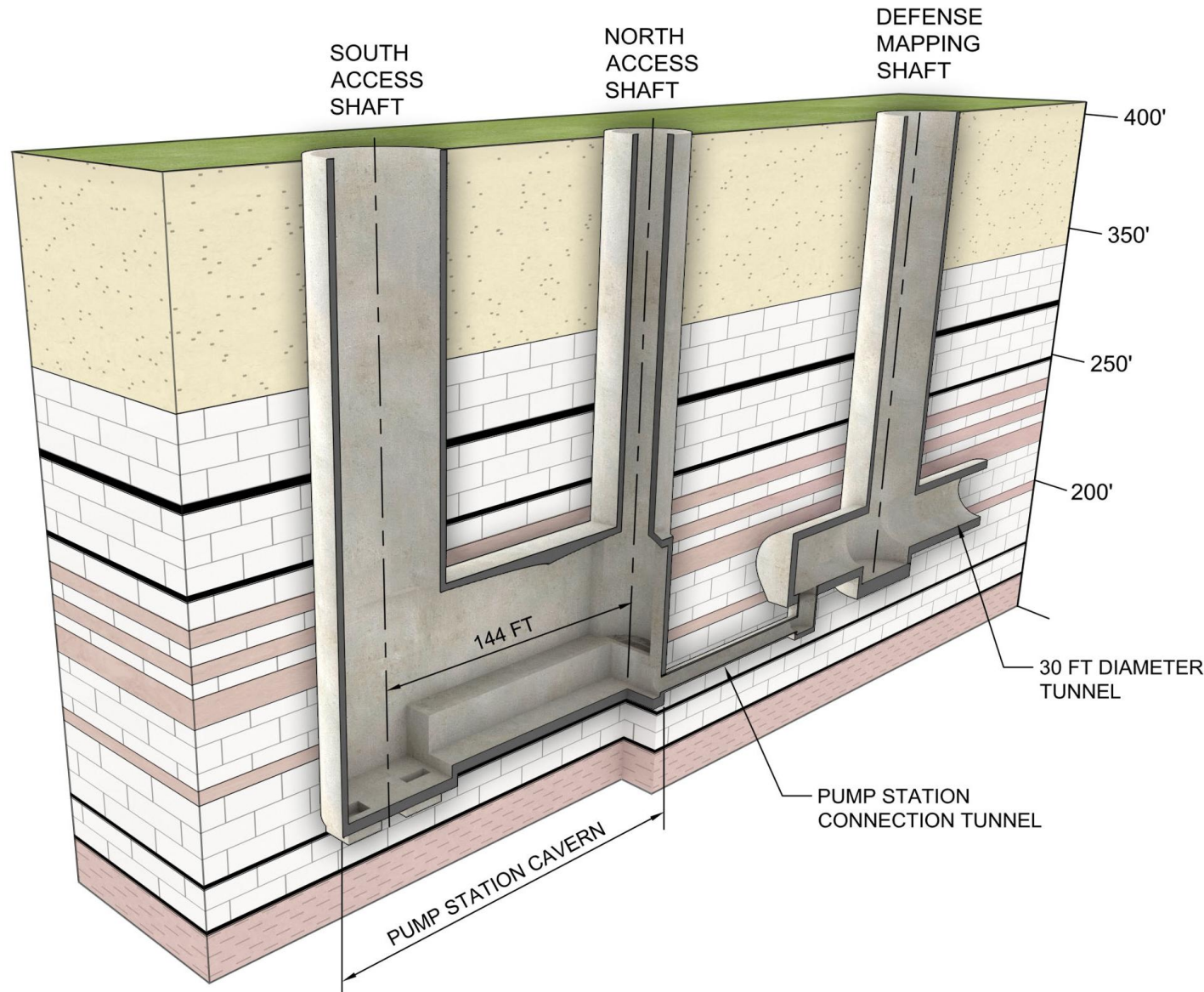


LMRDP CSO Storage Tunnel: Geologic Profile

Lower & Middle River Des Peres Tunnel



LMRDP CSO Storage Tunnel: Pump Station Cavern



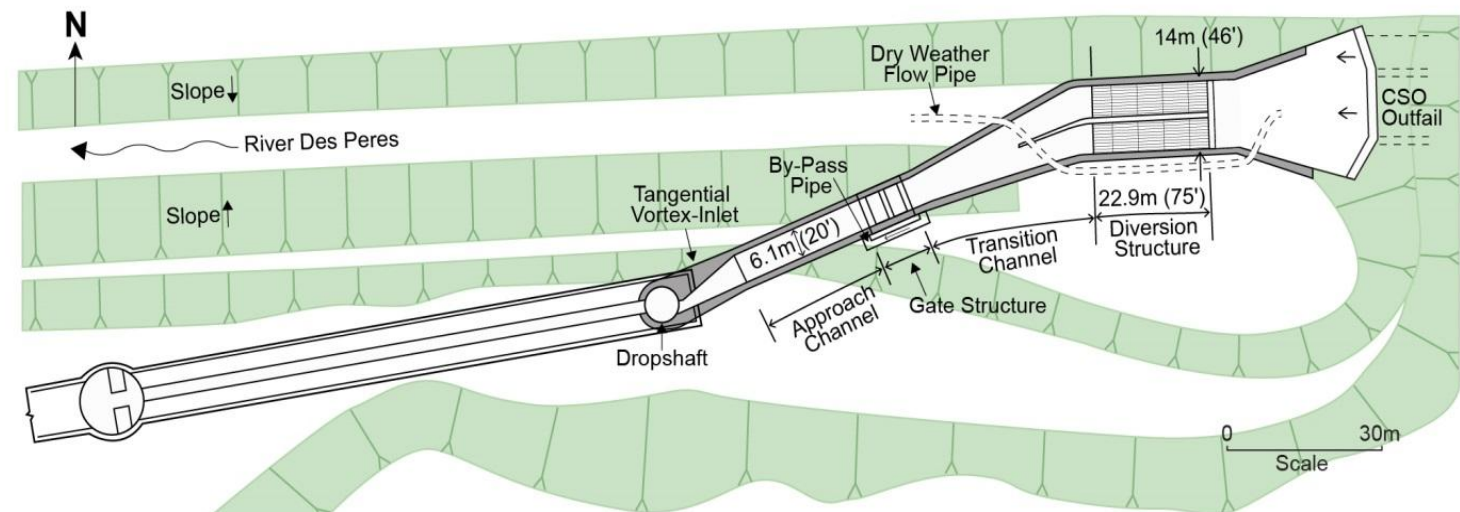
Tunnel Contractor

- Pre-excavation grouting
- Diaphragm walls into bedrock
- Excavation:
 - Top heading/center drift
 - Benching
- Pattern rock bolts and shotcrete

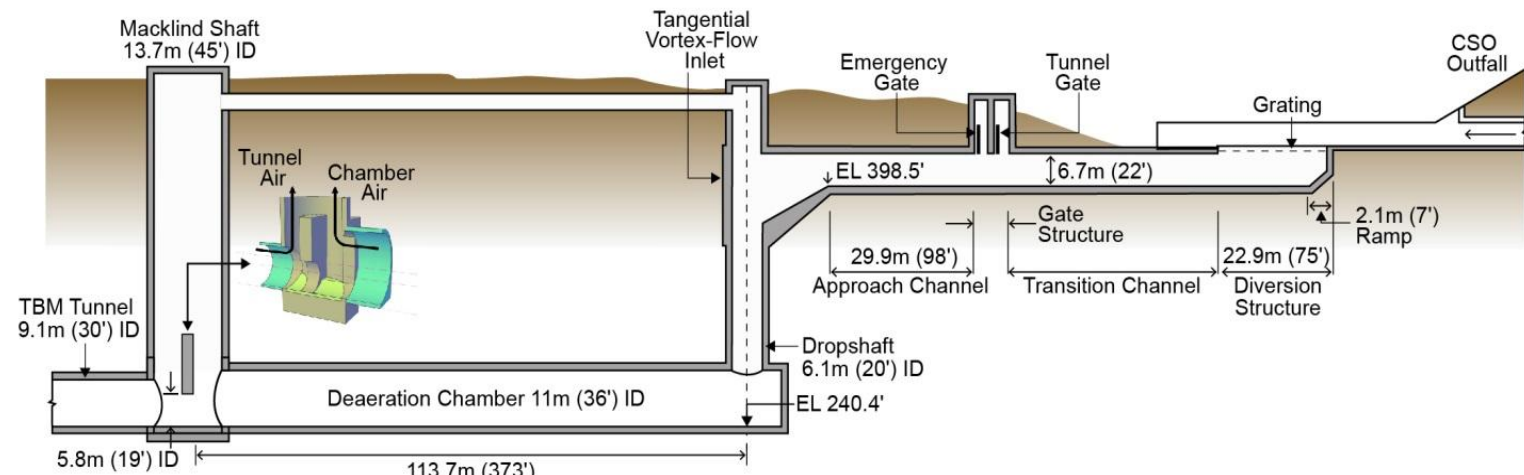
Pump Station Contractor

- Install CIP concrete linings
- Build out and commission

LMRDP CSO Storage Tunnel: Forest Park Intake



PLAN



SECTION



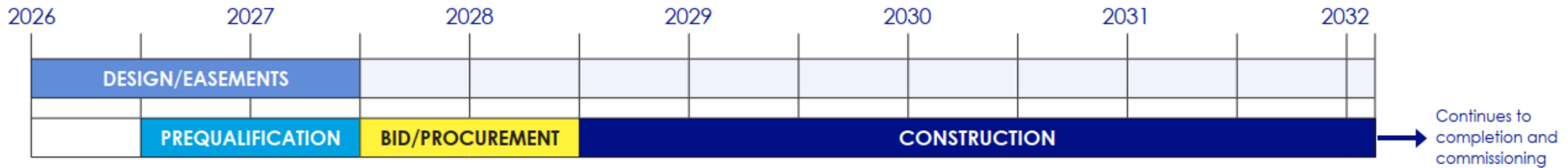
River des Peres CSO Outfall.



Maline Creek Cavern, similar to Forest Park Deaeration Chamber

LMRDP CSO Storage Tunnel: Design & Construction Timeline

- Prequalification: September 2026
- Industry day: October 2, 2026
- Advertise for bids: July 2027
- Construction: NTP Fall 2028
- Estimated cost: ≈ \$1.3 B*



*Schedules and costs are tentative as determined by current planning efforts, and subject to program implementation and final budget approval. Prequalification: based on project experience, performance, financial strength.

Upper River Des Peres and River Des Peres Tributaries Storage Tunnel — MSD 12441



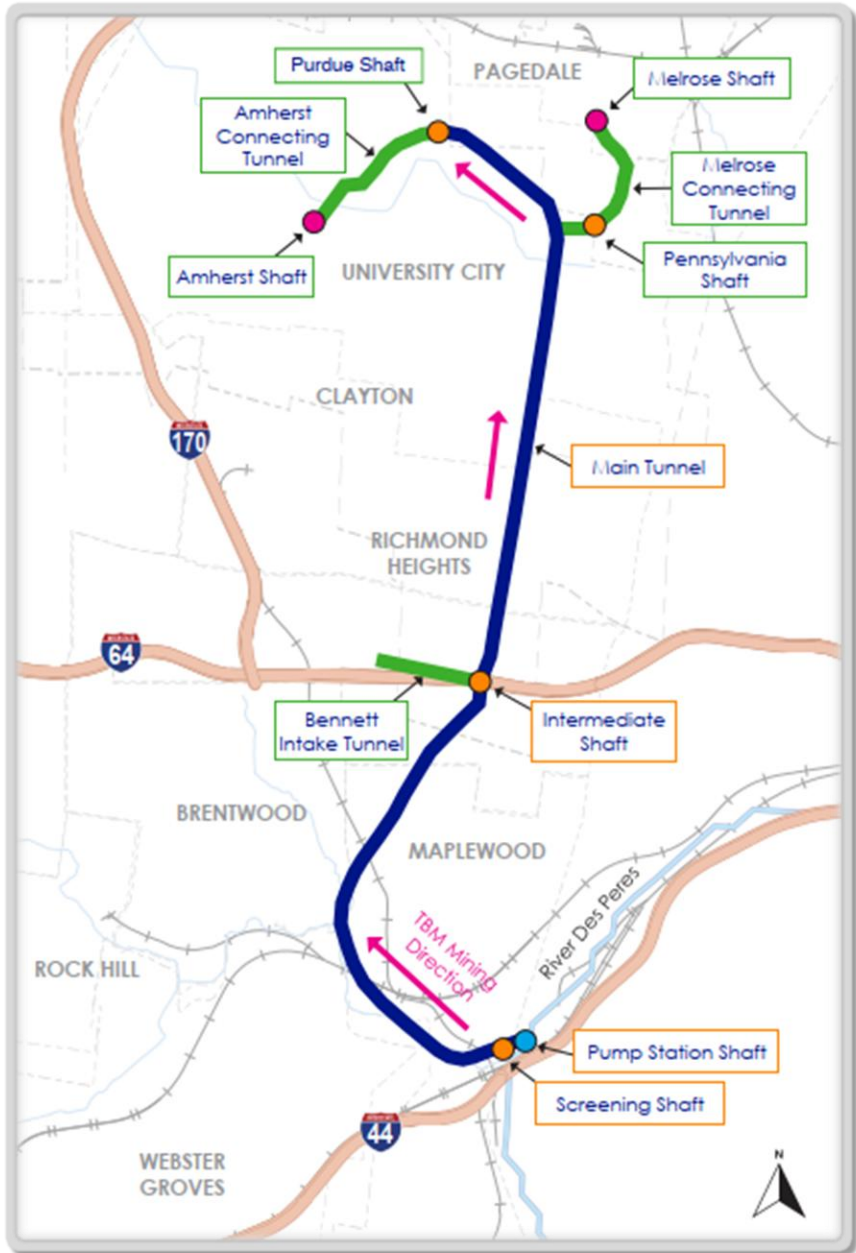
Deer Creek Tunnel, Main Beam TBM.

- Storage tunnel with pump station shaft
- 16 intakes
- Adjacent to Deer Creek Tunnel



Deer Creek Tunnel, lining installed.

URDP and RDP Tributaries Storage Tunnel: Alignment and Main Shafts



Main Tunnel

- 6 miles long by main beam TBM
- 18-foot finished dia. (CIP)
- 90-feet to 240-feet deep

Main Shafts

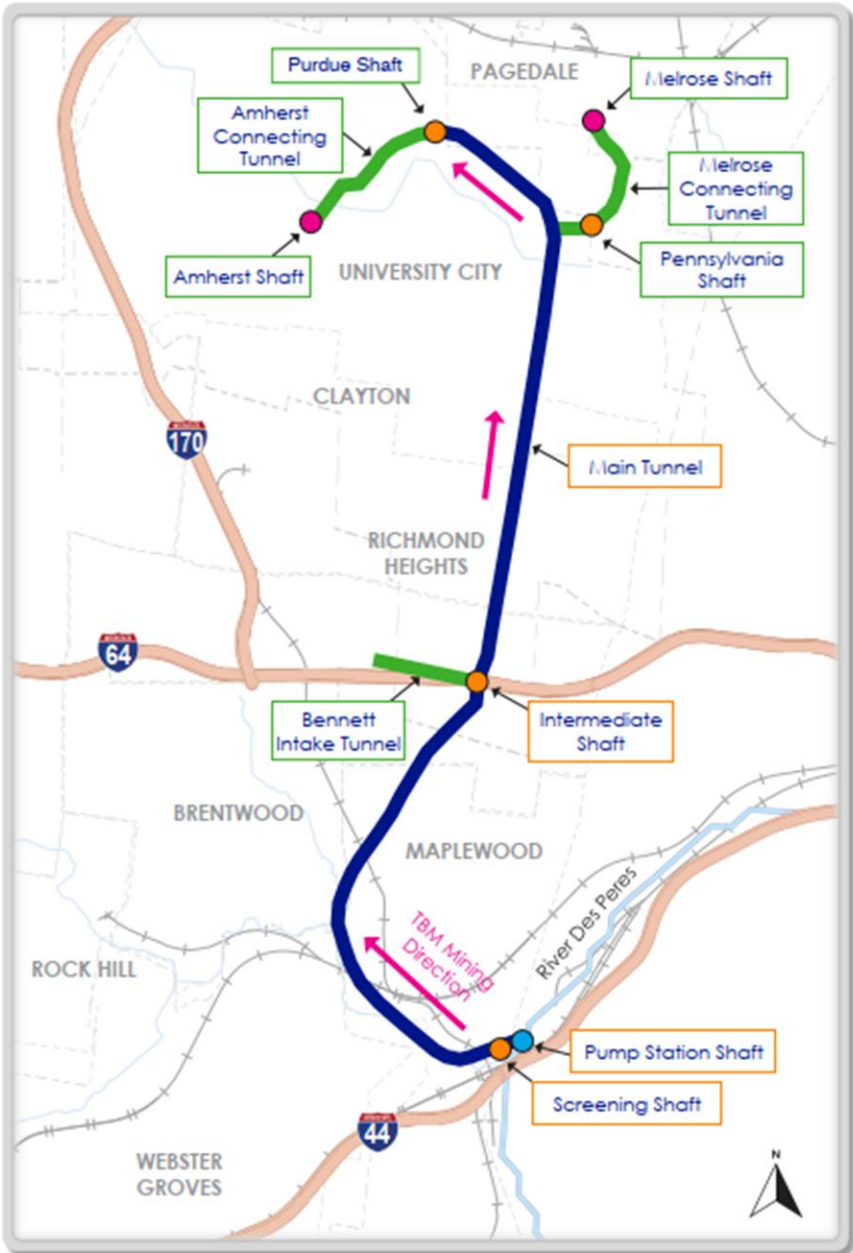
- Pump Station (65 ft)
- Screening – staging tunnel construction (45 ft)
- Intermediate – staging (northern portion) (45 ft)
- Purdue Shaft – TBM removal (30 ft)
- Pennsylvania – Melrose Connecting Tunnel (30 ft)

Other Major Shafts

- Amherst – TBM removal (20 ft)
- Melrose – TBM removal (20 ft)

Note: This project will impact multiple municipalities with different regulations.

URDP and RDP Tributaries Storage Tunnel: Connecting Tunnels and Intakes



Connecting Tunnels (3)

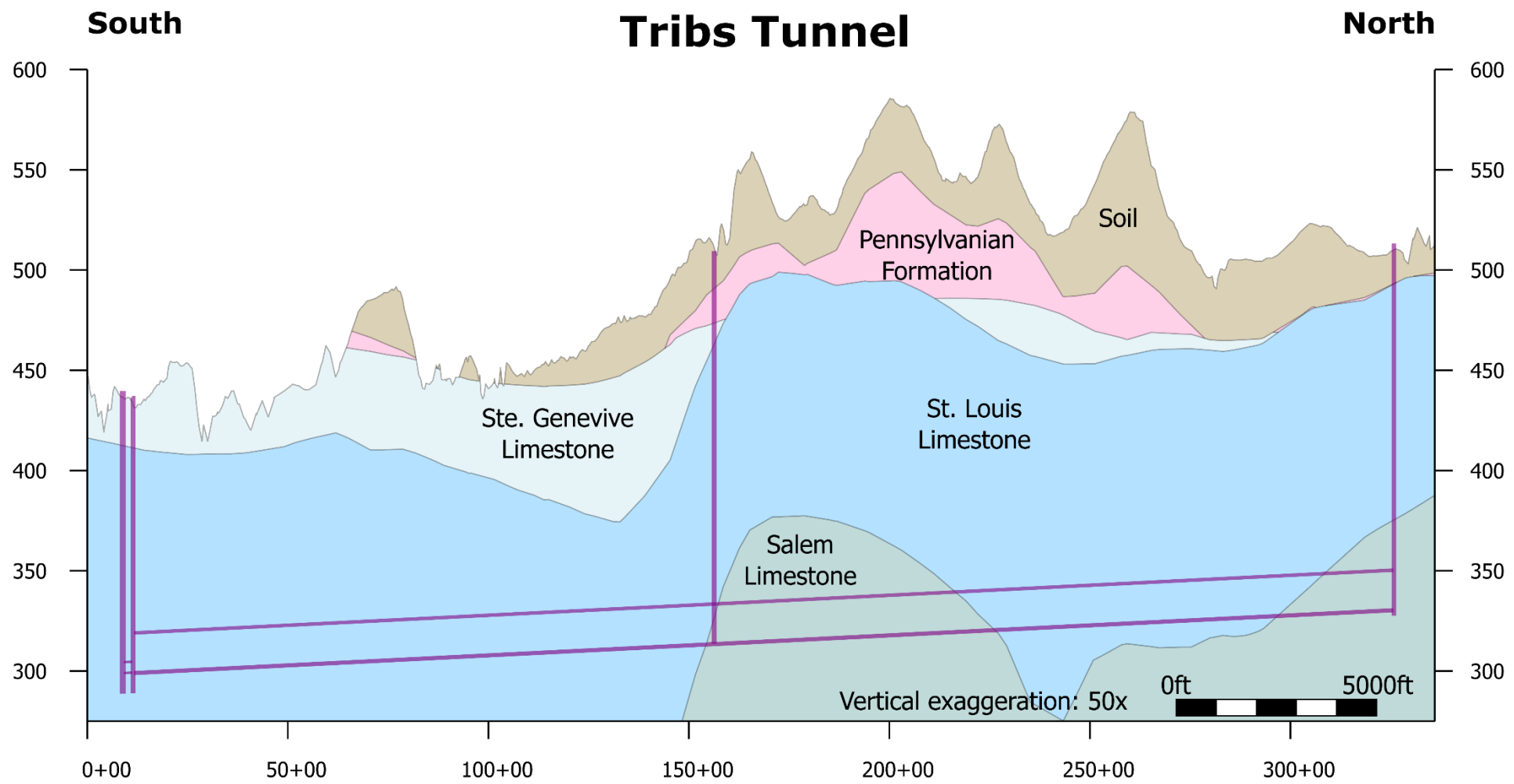
- Mined by main beam rock TBM
- 12-ft dia. cast-in-place lining
- Length (total): 12,200 ft (approx.)
- Length (each): 3,600-4,300 ft

Intakes

- 16 total
- Dropshafts and deaeration chambers

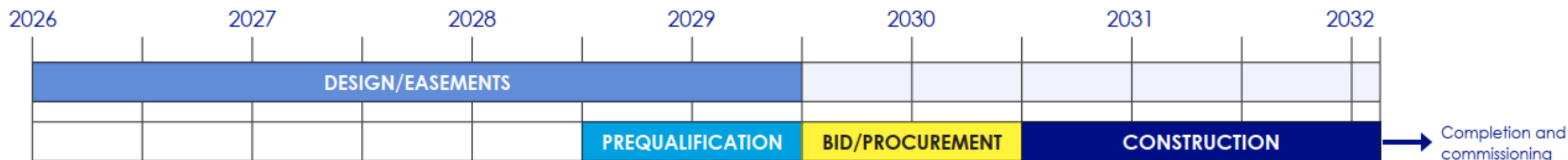
Note: This project will impact multiple municipalities with different regulations.

URDP and RDP Tributaries Storage Tunnel: Geologic Profile



URDP and RDP Tributaries Storage Tunnel: Design, Procurement, and Construction Timeline*

- Design at 60%
- Prequalification: mid-2028
- Advertise for bids: mid-2029
- Construction: NTP mid-2030
- Estimated cost: ≈ \$800M*



*The schedules and costs are tentative as determined by current planning efforts, and subject to program implementation and final budget approval.

Prequalification

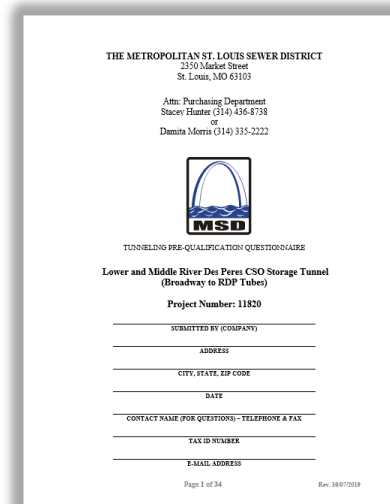
- **Contractors must be prequalified**
- **Contractor pre-qualification package distribution**
- **Are you on the List?**
- **Tentative Important dates:**
 - September 18, 2026
 - October 2, 2026
 - December 1, 2026
 - March 27, 2027

Prequalification Package Distribution

Industry Day

Prequalification Submittals Due to MSD

Final Prequalification Letter Sent to Contractors



THE METROPOLITAN ST. LOUIS SEWER DISTRICT
2330 Market Street
St. Louis, MO 63103

Attn: Purchasing Department
Sharon Hunter (314) 436-8738
or
Dannette Morris (314) 335-2222



TUNNELING PRE-QUALIFICATION QUESTIONNAIRE
Lower and Middle River Des Peres CSO Storage Tunnel
(Broadway to RDP Tubes)
Project Number: 11820

SUBMITTED BY (COMPANY) _____
ADDRESS _____
CITY, STATE, ZIP CODE _____
DATE _____
CONTACT NAME (FOR QUESTIONS) - TELEPHONE & FAX _____
TAX ID NUMBER _____
E-MAIL ADDRESS _____

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Industry Day – October 2, 2026

- **Presentation**
 - Technical Overview
 - Contract Requirements
 - Question and Answer Opportunity
- **Opportunity for self-guided visit to work sites**
- **Who should attend?** Interested bidding contractors
- **How to receive information about attending?** Contact MSD

Contact Us and Stay Updated









@MSDProjectClear



Metropolitan St. Louis
Sewer District

MSDProjectClear.org/Projects/tunnels

For questions, please contact project leaders at LMRDPTunnel@stlmsd.com or using the following:

Information	Construction Dept	Design Dept	Design Engineer
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Email	afmueh@stlmsd.com	paprid@stlmsd.com	andrew.bursey@jacobs.com