Fort Wayne Tunnel Works



Foster Park Retrieval Shaft

October 25, 2017







- Brief review of the Tunnel & Shafts project
- Why we have to be in Foster Park
 - Retrieval Shaft
 - Drop Shaft
- What the project is going to solve
- What you'll be seeing soon
- Working with Parks
 - Safety
 - Trail
 - Golf Course
 - Log Cabin



Sewer system facts



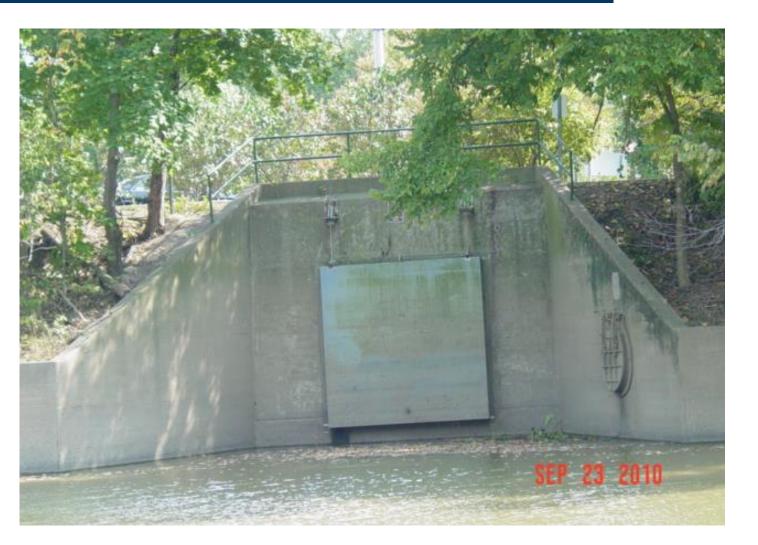


- 3 types of sewer systems
 - Sanitary
 - Stormwater
 - Combined
- 1/3rd of Fort Wayne's sewers are combined
- 41 CSO locations
- A typical year of rain will trigger CSO discharges 71 times



Foster Park - combined sewer discharge

Fort Wayne's 2nd largest
 Combined Sewer Overflow
 Point

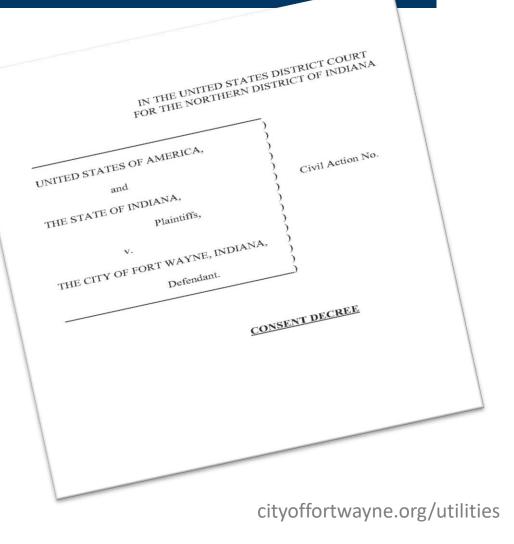




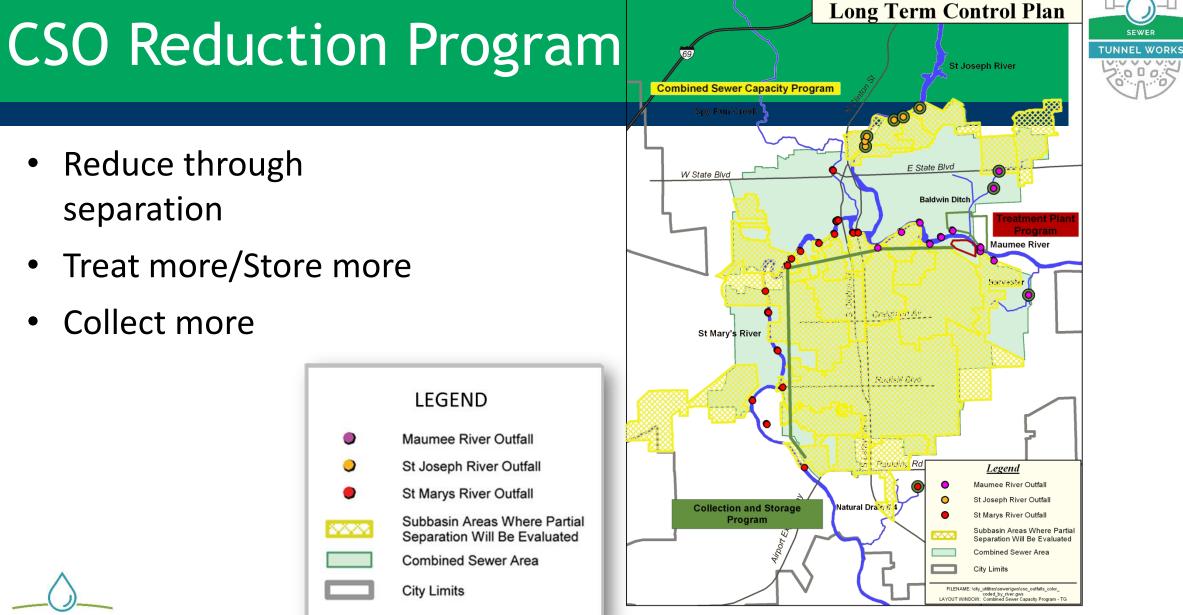
Consent Decree



- Fort Wayne entered in April 2008
- Implement the LTCP to reduce the volume of combined sewage into the 3 rivers by 2025
- St. Joseph River to have no more than 1 overflow event per typical year
- St. Marys and Maumee Rivers to have no more than 4 overflow events per typical year









Collect more



Tunnel Works Program

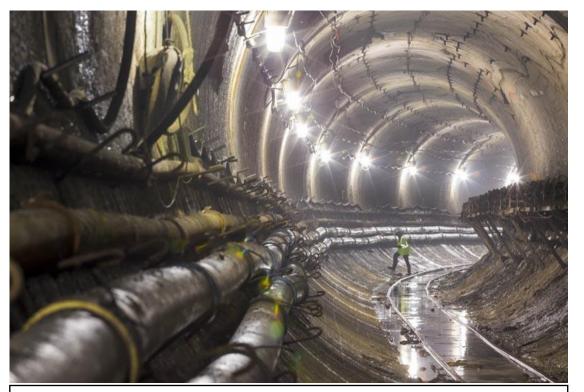
- Three Rivers Protection and Overflow Reduction Tunnel (3RPORT)
 - Deep-rock tunnel
 - Drop shafts
 - Pump station
- Near surface infrastructure
 - Consolidation sewers





Tunnel Works Program



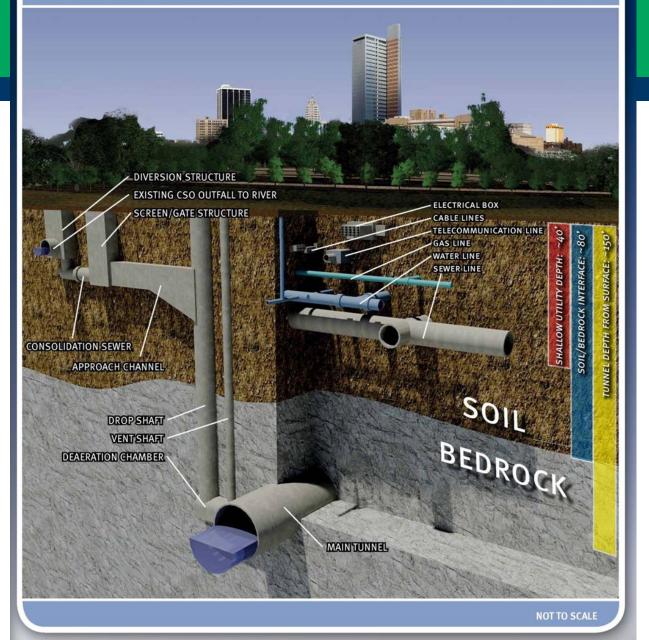


Citizens Energy Deep Rock Connector Tunnel – Indianapolis, IN Courtesy of AECOM

- Largest public infrastructure investment in Fort Wayne's history
- Protects neighborhoods
- Meets federal mandates
- Meets future needs of sewer system

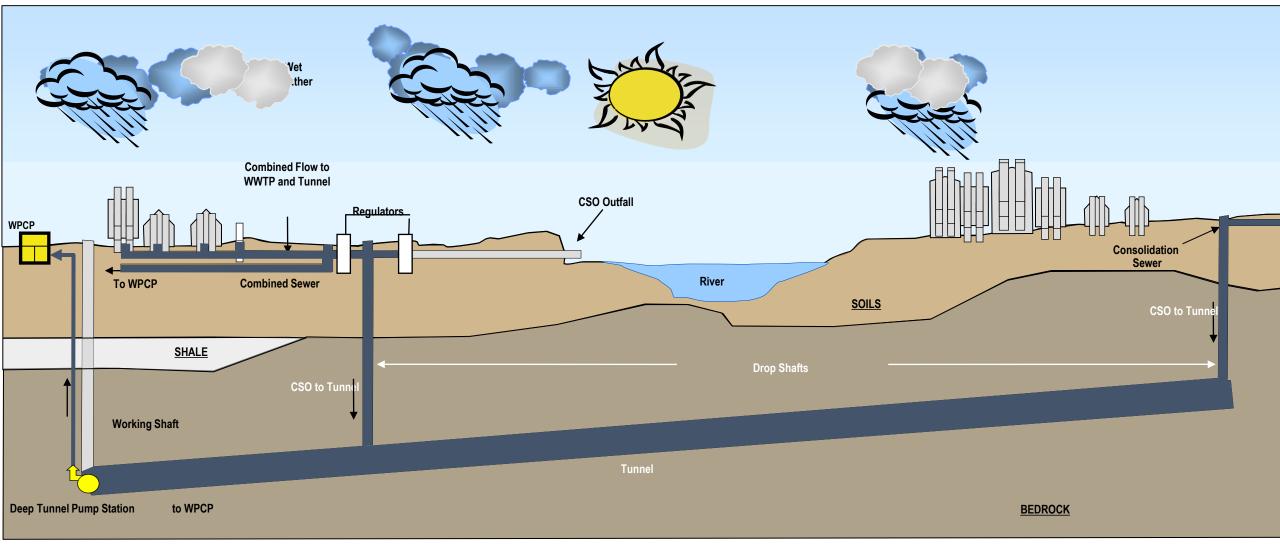


TUNNEL SYSTEM COMPONENTS









Tunnel operation

Tunnel Route

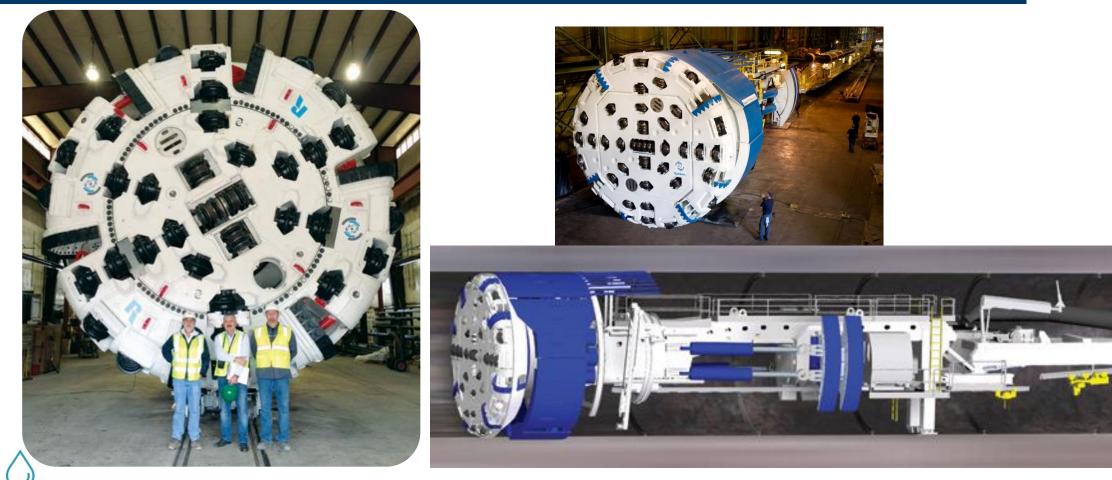








Tunnel Boring Machine (TBM)







The 3RPORT deep-rock tunnel

- Approximately 5 miles
- 19-ft bore, 16-ft finished diameter
- Seven (7) connections to the tunnel (drop shafts)
- Tunnel depth will be 220 ft
- Tunnel can convey about
 800 million gallons per day



OARS – Columbus OH Courtesy of DLZ Engineering



The 3RPORT deep-rock tunnel

- The tunnel will have two means of emptying
 - Gravity siphon
 - Pumped
- Siphon will be connected to the Wet Weather Pump Station
- Deep Dewatering Pump Station will be in the same shaft as the tunnel launch shaft



Chicago TARP Mainstream Pump Station





Types of tunnel shafts



- Retrieval shaft
 - Location where TBM is removed after finishing its work
 - 30 feet in diameter
 - Requires large space (2+ acres)
- Drop shaft
 - Locations where sewage flow drops into tunnel
 - Typically 4 to 8 feet in diameter
 - Requires no more than an acre for construction



Working shaft & DDPS shaft









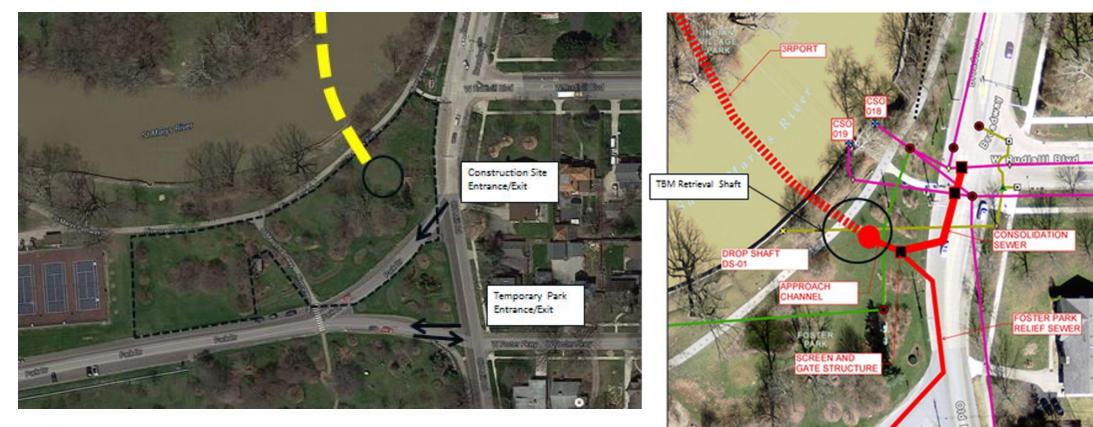






Retrieval shaft







cityoffortwayne.org/utilities

Fenced worksite area







Current activities at Foster Park required for safe worksite

- Surveying begins 10/27/17
- Clearing and Removal of Vegetation and Fence Installation late October, 2017
- Utility Relocation early November, 2017
- Leveling working site surface mid November, 2017
- Cranes will move in December, 2017
- Digging tentatively begins in January, 2018
 - Schedules may vary depending upon weather





For more information



For more information, please visit the *Tunnel Works* website at: <u>FortWayneTunnel.org</u>

For questions about the *Tunnel Works* Program, please email City Utilities at:

FortWayneTunnel@cityoffortwayne.org

