

# GLWA Downriver Transmission Main Drinking Water State Revolving Fund (DWSRF) Project Plan

Public Hearing

June 23, 2021

# Drinking Water State Revolving Fund (DWSRF)

- Jointly administered loan program:
  - A) Michigan Department of Environment, Great Lakes, and Energy (EGLE)
  - B) Michigan Municipal Bond Authority
- Funding for water infrastructure projects to resolve current needs
- 20-year loan with interest rate of approximately 1.875%

# Downriver Communities – Need for DWSRF Project

- Benefitting communities:
  - Flat Rock, Gibraltar, Riverview, Rockwood, Romulus, Southgate, Taylor, Trenton, and Woodhaven; Charter Township of Berlin, Brownstown, and Huron; Grosse Ile Township; and Village of South Rockwood
  - Transmission main serving a population of approximately 236,500
  - Additional communities located to the west, including Van Buren Township, Sumpter Township, Belleville, and the YCUA service area will also benefit from the additional redundancy in the system. This includes an additional 157,000 people.
- Aging infrastructure could result in water main breaks
- A break along the Allen Road transmission main would result in communities losing pressure and boil water advisories until a repair could be made
- Need for redundancy to prevent disruption of service

# Downriver Communities – Previous Planning Efforts

- 2015: Detroit Water and Sewerage Department (DWSD) Water Master Plan
  - Redundancy issue raised by a Technical Advisory Committee Analytical Work Group in 2012
- 2021: Capital Improvement Plan (CIP)

# Downriver Communities – DWSRF Proposed Projects

The proposed projects consist of the following transmission main and system improvements:

- Adding a loop to provide redundancy on Inkster Road between Wick Road and Pennsylvania Road
- Adding parallel mains to provide redundancy along Allen Road and Dixie Highway
- Improvements at two Trenton meter vaults including replacing meters and check valves, as well as modifications to the bypass at TN-03 to allow the Allen Main to be backfed during emergencies.
- Demolishing two reservoirs at the Electric Avenue Pump Station

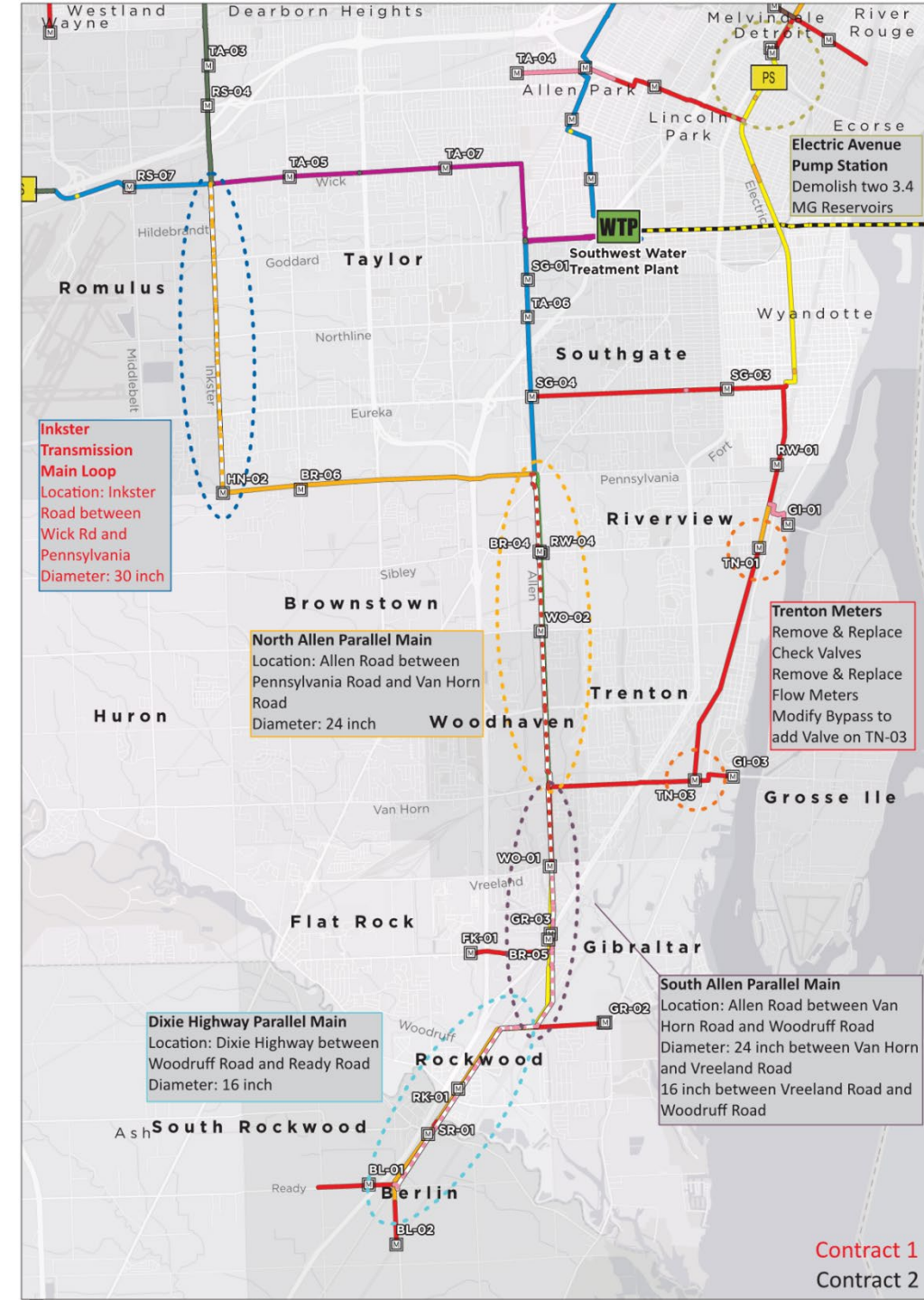
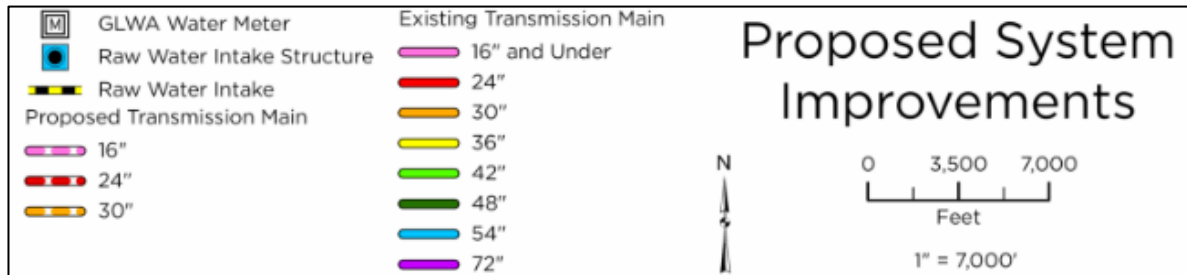
# Improve System Redundancy – New Transmission Main

The following alternatives were evaluated:

- Regional alternative – Not a viable alternative
- Optimal performance of existing facilities – Would not increase redundancy
- Transmission main and related system improvements
  - Alternative pipe materials and methods of construction considered

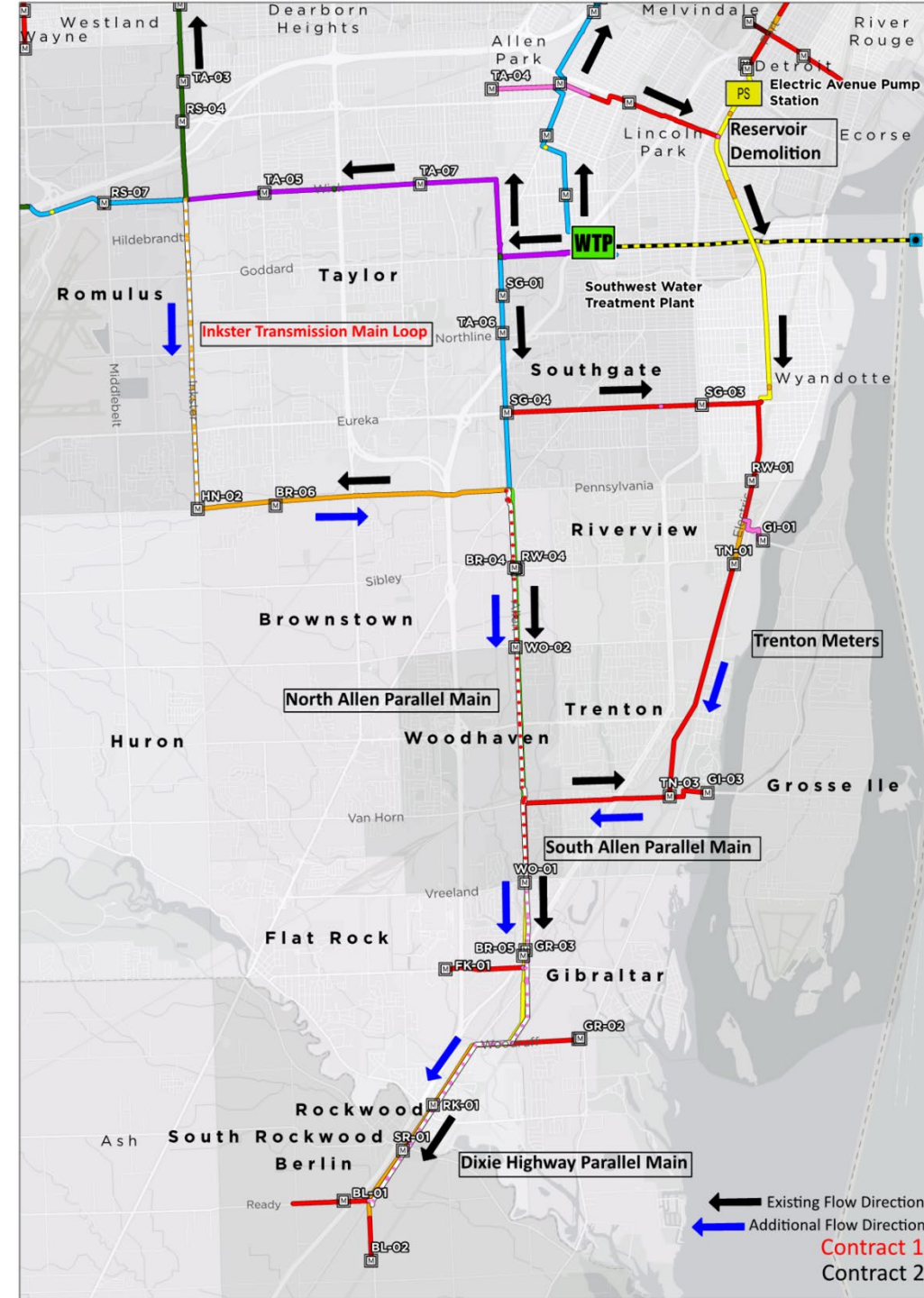
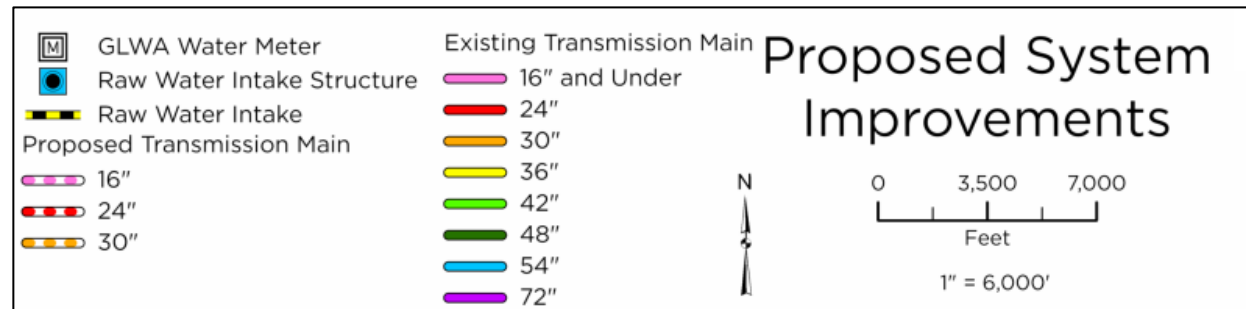
# Selected Alternative – Overview of Project Areas

- Inkster Transmission Main Loop
- North Allen Parallel Main
- South Allen Parallel Main
- Dixie Highway Parallel Main
- Trenton Meter Upgrades
- Electric Avenue Pump Station Reservoirs Demolition



# New Water Main Improvements Provides Multiple Paths for Water Delivery

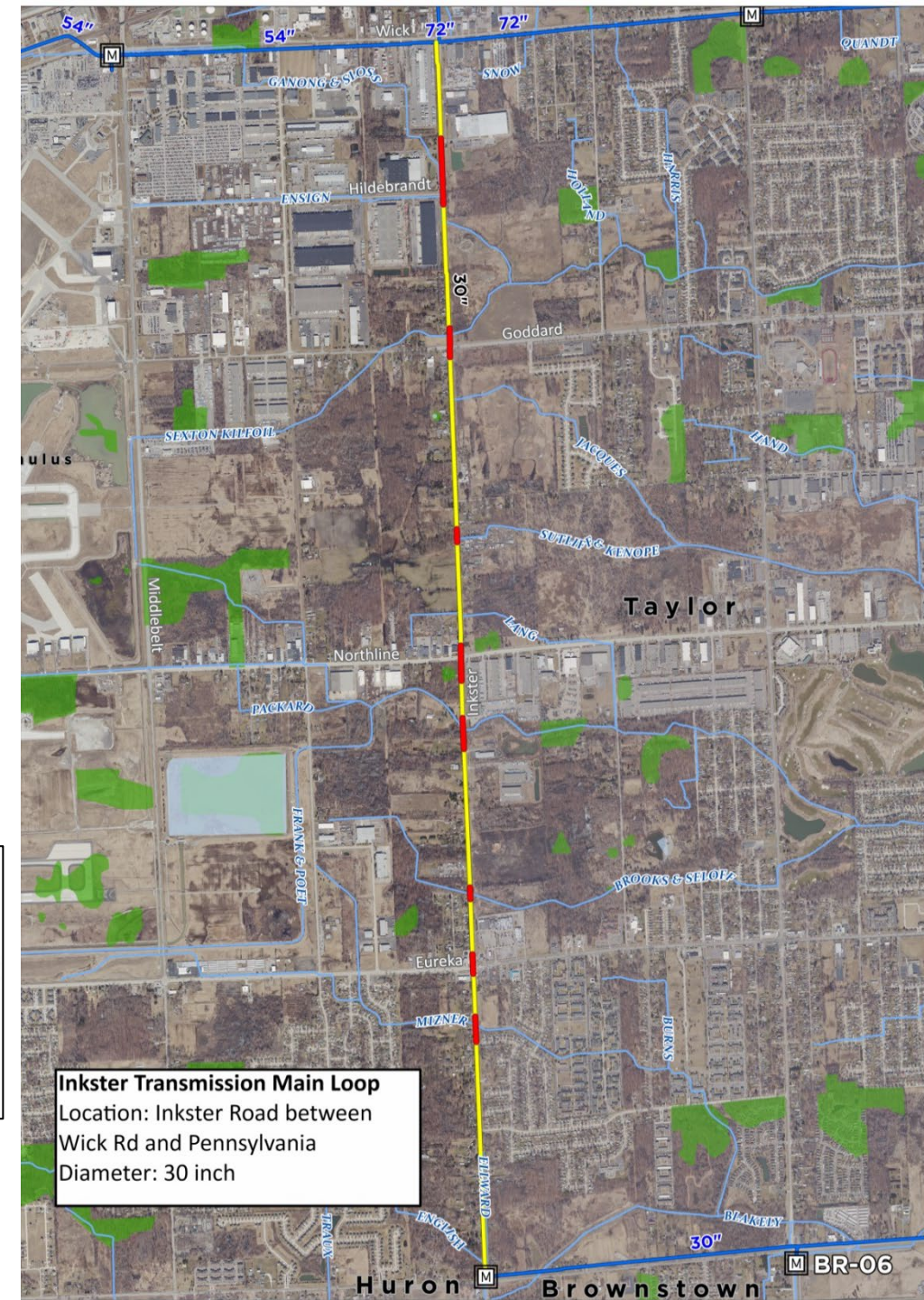
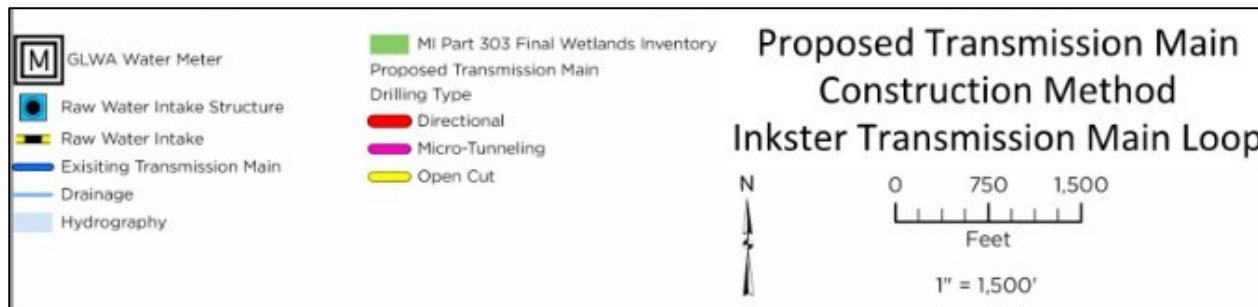
- New transmission mains and Trenton meter modifications
- Black arrows: Existing flow direction of water
- Blue arrows: Additional flow direction of water





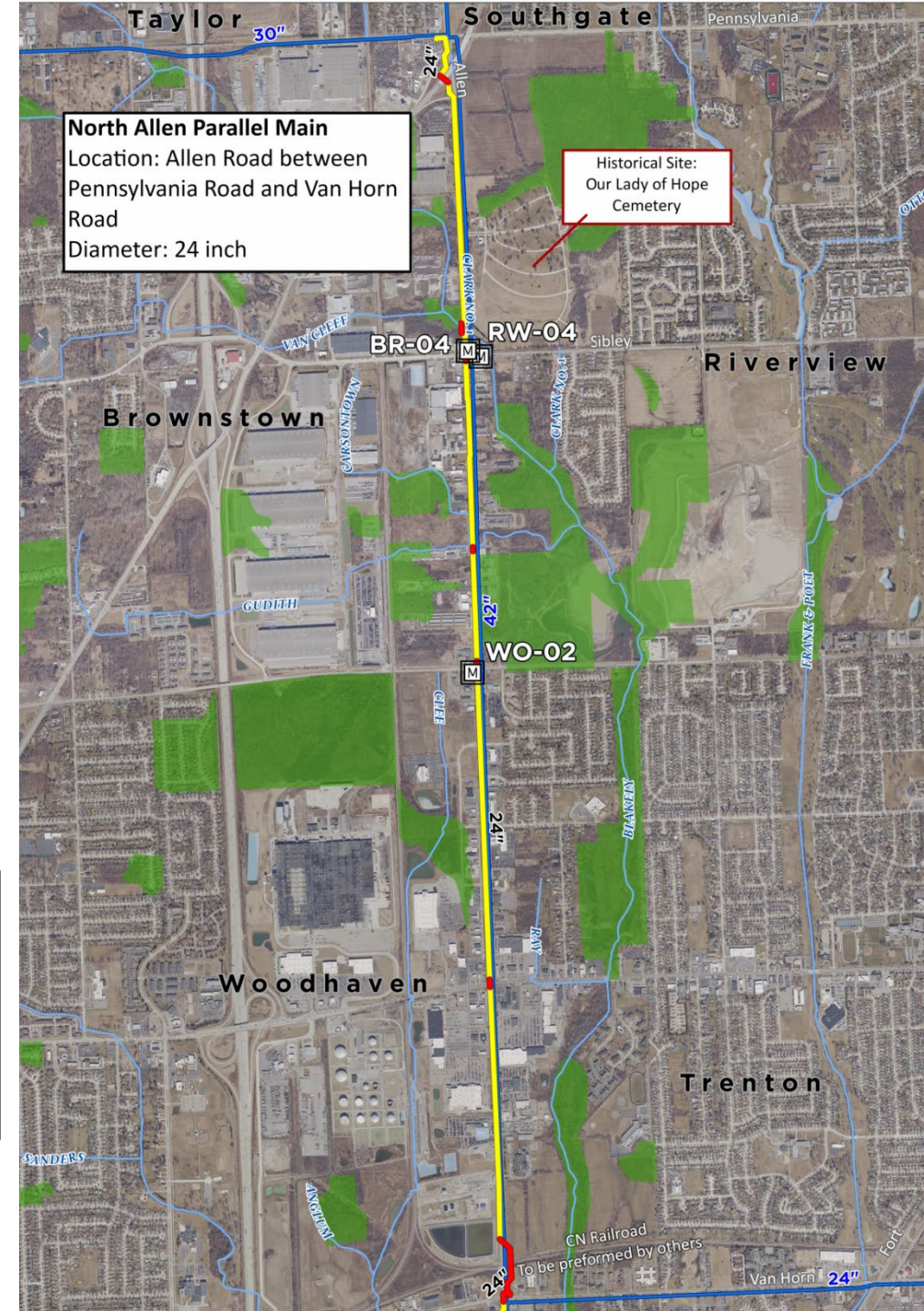
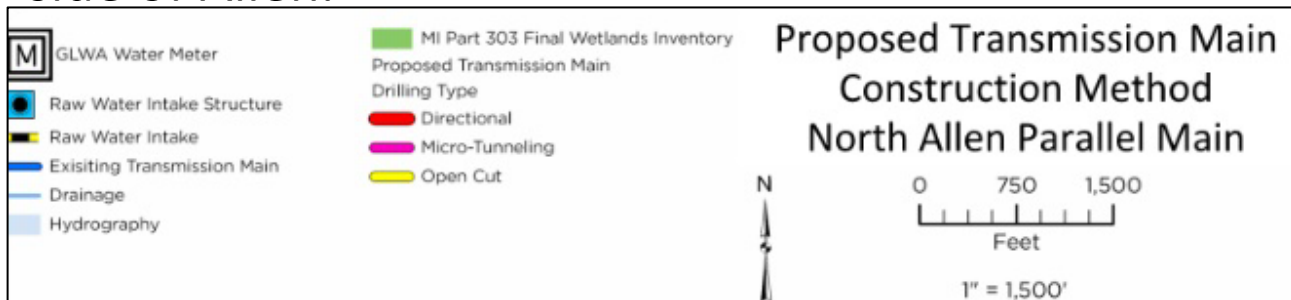
# Inkster Transmission Main Loop

- Along Inkster Road from Wick Road to Pennsylvania Ave
- 30-inch water main along west side of Inkster Road
- Open cut and trenchless installation proposed
  - Trenchless installation under major road intersections
  - Trenchless installation under water courses
- Threatened species could be in project area. Measures will be taken to protect them during construction.



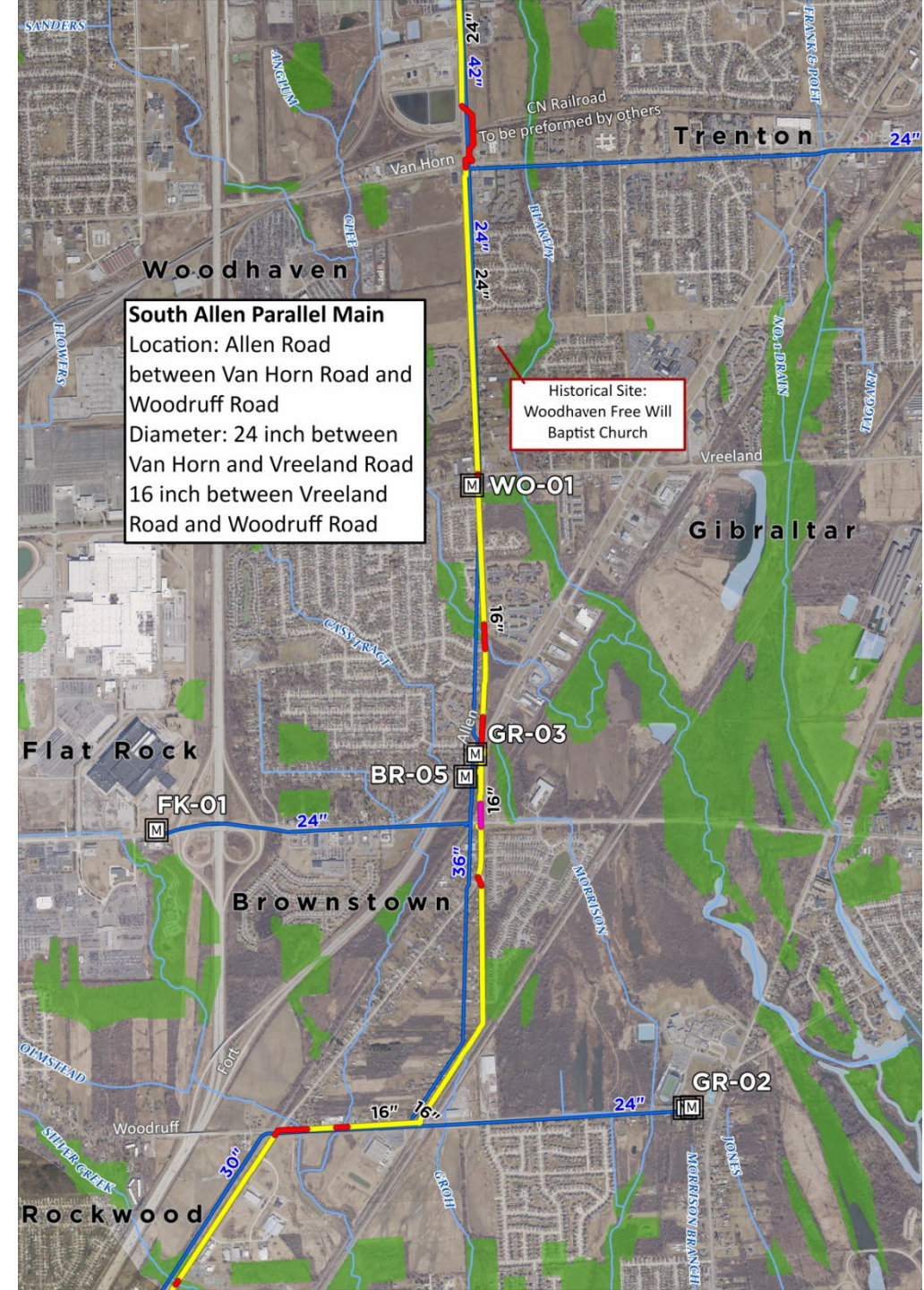
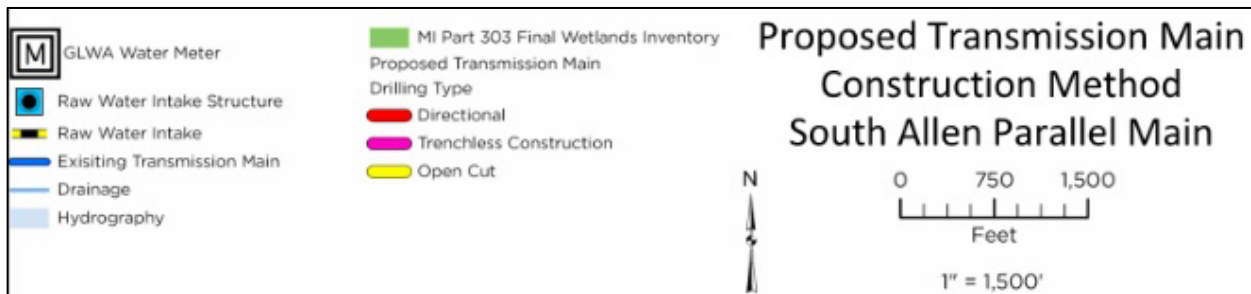
# North Allen Parallel Main

- Along Allen Road from Pennsylvania Avenue to Van Horn Road
- 24-inch water main on west side of road
- Open cut and trenchless installation proposed
  - Trenchless installation under major road intersections
  - Trenchless installation under water courses
- Endangered and threatened species could be in project area. Measures will be taken to protect them during construction.
- Historic Site: Our Lady of Hope Cemetery on east side of Allen.



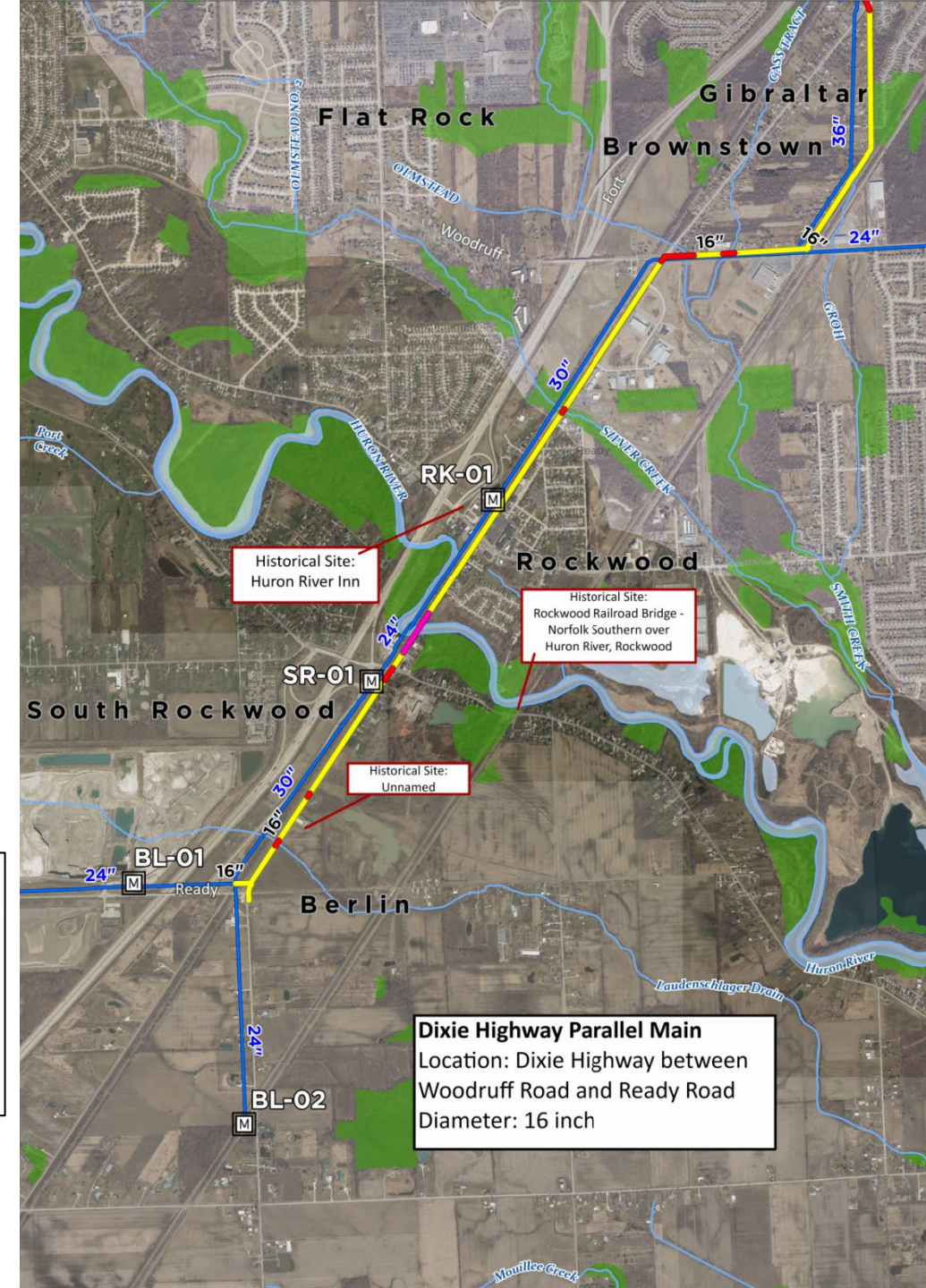
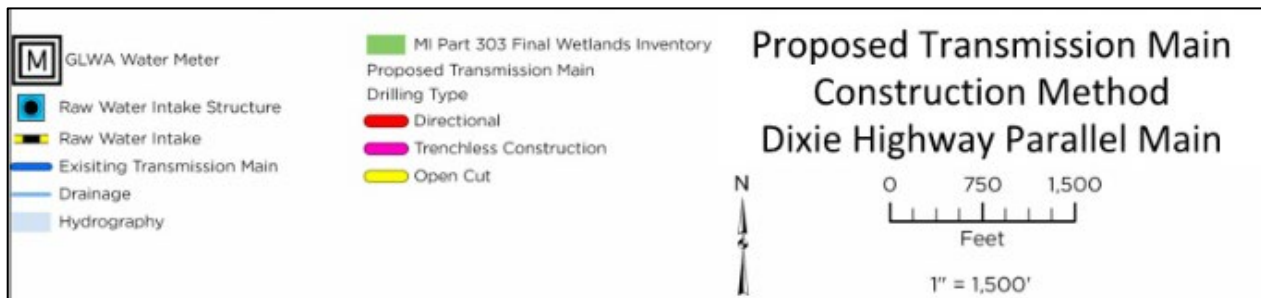
# South Allen Parallel Main

- Along Allen Road from Pennsylvania Avenue to Woodruff Road
- 24 and 16-inch water main
- Open cut and trenchless installation proposed
  - Trenchless installation under major road intersections
  - Trenchless installation under water courses
- Endangered and threatened species could be in project area. Measures will be taken to protect them during construction.
- Historic Site: Woodhaven Free Will Baptist Church on east side of road



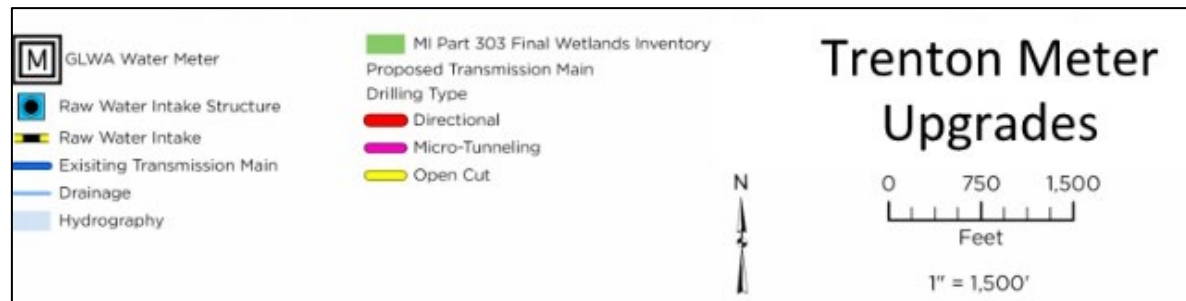
# Dixie Highway Parallel Main

- Along Dixie Highway from Woodruff Road to Ready Road
- 16-inch water main
- Open cut and trenchless installation proposed
  - Trenchless installation under water courses
  - Huron River will use jack and bore or micro-tunneling
- Endangered and threatened species could be in project area. Measures will be taken to protect them during construction.
- Historic Sites include the Huron River Inn, Rockwood Railroad Bridge, and a Queen Anne style house.



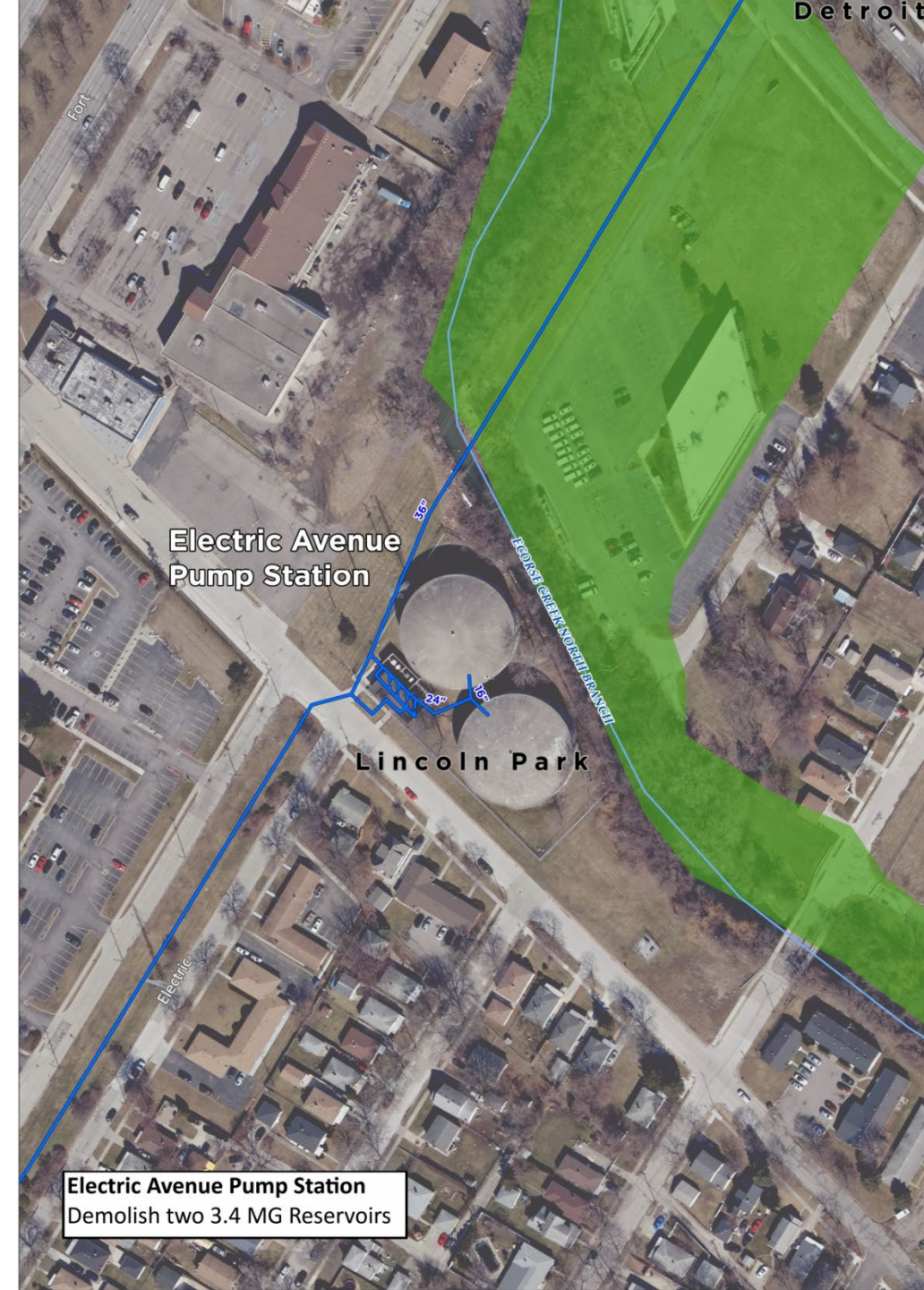
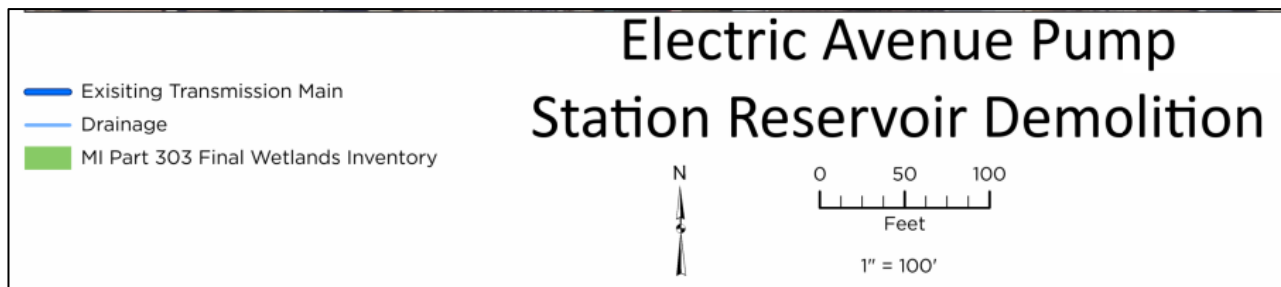
# Trenton Meter Upgrades

- Upgrades to existing TN-01 and TN-03 meters
  - Replace meters
  - Replace check valves
  - TN-03 will include bypass modifications with an actuated valve to allow backfeed of the Allen main under emergency conditions
- Work will take place within vicinity of the meter vaults
  - No traffic disruptions
- Endangered and threatened species are located within 1.5 miles of TN-01 and TN-03. The area to be disturbed will be observed to identify species present. Measures will be taken to protect identified species during construction.



# Electric Avenue Pump Station Reservoir Demolition

- Demolition of two deteriorating 3.4 MG water reservoirs that were removed from service in 2017 and associated piping connections
- No service disruptions expected



**Electric Avenue Pump Station**  
Demolish two 3.4 MG Reservoirs

# DWRF Project Cost Opinion and User Cost

Inkster Transmission Main Loop	\$17,400,000
North Allen Parallel Main	\$19,000,000
South Allen Parallel Main	\$12,000,000
Dixie Highway Parallel Main	\$11,300,000
Trenton Meter Upgrades	\$800,000
Electric Avenue Reservoir Demolition	\$400,000
<b>Total Project Cost</b>	<b>\$60,900,000</b>
Annual Payment at 1.875% Interest	\$3,680,000
Service Area Households	1,400,000
<b>Annual Estimated User Cost for Households</b>	<b>\$2.63</b>

# Project Schedule

Project	Dates				
	Planning	EGLE Approved Design	Permitting	Loan Closing	Construction
DWSRF Project Plan	July 1, 2021	–	–	–	–
Contract 1					
Inkster Transmission Main Loop	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022
Contract 2					
North Allen Road Parallel Transmission Main	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022
South Allen Road Parallel Transmission Main	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022
Dixie Highway Parallel Transmission Main	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022
Trenton Meters	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022
Electric Avenue Pump Station Reservoirs Demolition	–	May 2022	August/September 2022	Q4: August 29, 2022	Notice to Proceed October 28, 2022





# Environmental Impacts and Mitigation

- There will be no anticipated impact on Tribal, Historical, or Archeological resources
- The project crosses through wetlands, floodplains, and streams
- Minimal impact anticipated on streams and wetlands
- Endangered and threatened species may be located in the study area. Surveys will be performed to determine if species are present.

## Mitigation

- Trenchless installation proposed to minimize impact on streams, drains, Huron River, and wetlands
- EGLE/United States Army Corps of Engineers Joint Permit Application will be completed prior to construction
- Efforts will be made to reduce the likelihood of negative impacts on endangered and threatened species that are confirmed to be present in study area. Actions will be identified as part of the final design.

# Construction/Operational Impact

- Impacts During Construction
  - Traffic disruption/delays and lane closures
  - Temporary noise and dust
  - Potential short term water service disruptions during connections
  - Pavement removal and surface disruptions
- Mitigation During Construction
  - Traffic control via alternate routes and detours
  - Typical work hours (7 am to 7 pm) and dust control measures via water trucks.
  - Notices to communities and residents prior to water connections and back up water supply plan.
  - Soil erosion control measures and associated surface restoration (i.e., grass seed and new pavement)

# Benefits of DWSRF Project

- Recycling of existing materials to reduce cost and environmental impact
- Positive benefits to the communities due to increased reliability of service
- Decrease likelihood of boil-water advisories and pressure loss

# Questions?



Photo credit: <https://trenchlesstechnology.com/constrained-hdd-foot-rocky-mountains-uses-restrained-joint-pvc/>