FY2022 Drinking Water Revolving Fund Public Hearing June 23, 2021

96-inch Water Transmission Main Relocation Project

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Topics

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    b) Project Objectives and Overview
    c) Project Schematic and Location
2. Implementation Alternatives
3. Engineer’s Opinion of Cost Breakdown
4. Recommended Alternative
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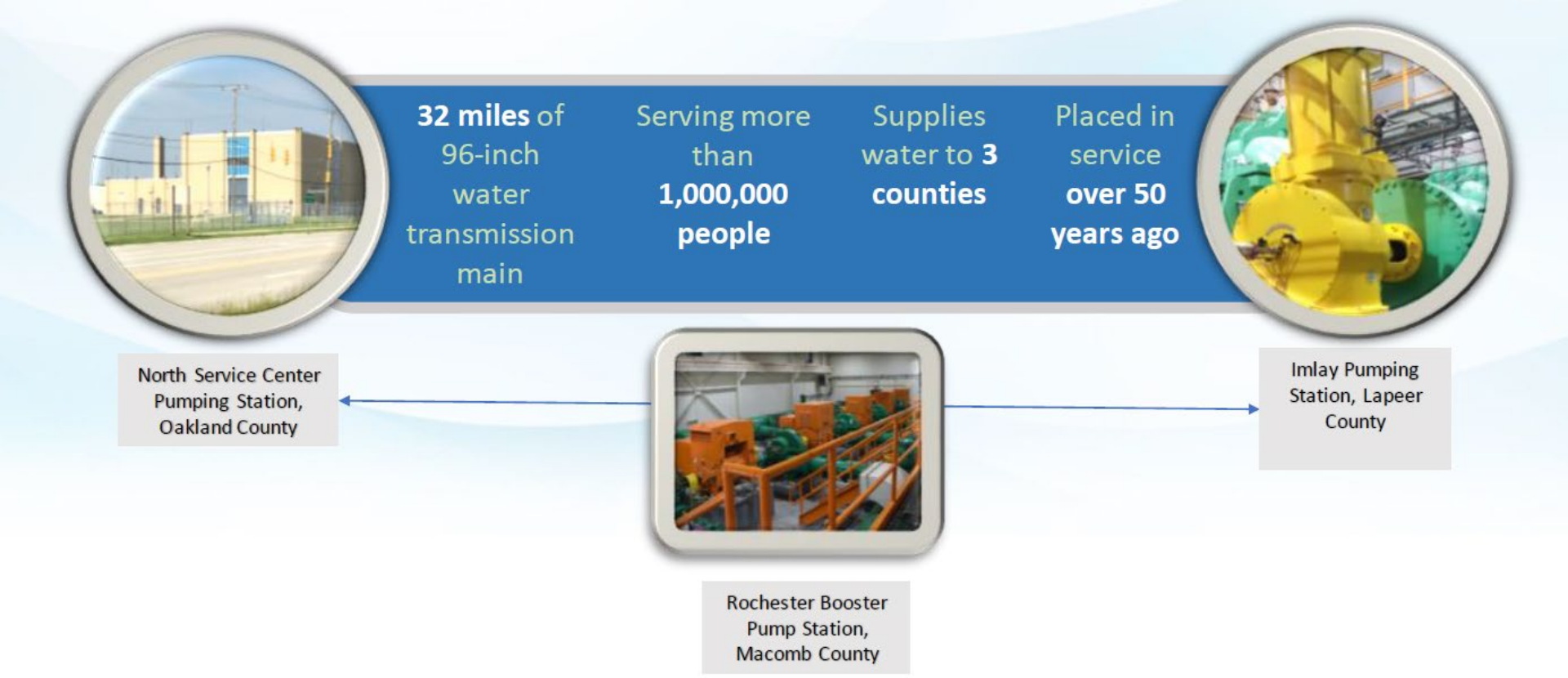
Highlights: 96-inch Water Transmission Main



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Project Objectives

Primary Objectives:

- Relocate 96-inch water transmission main (WTM) outside of closed G&H Industrial Landfill, Detroit Sportsmen's Congress Gun Club, and residential properties to improve access for future operations and maintenance.
- Continue providing essential, uninterrupted drinking water throughout construction.

Other Project Objectives Include:

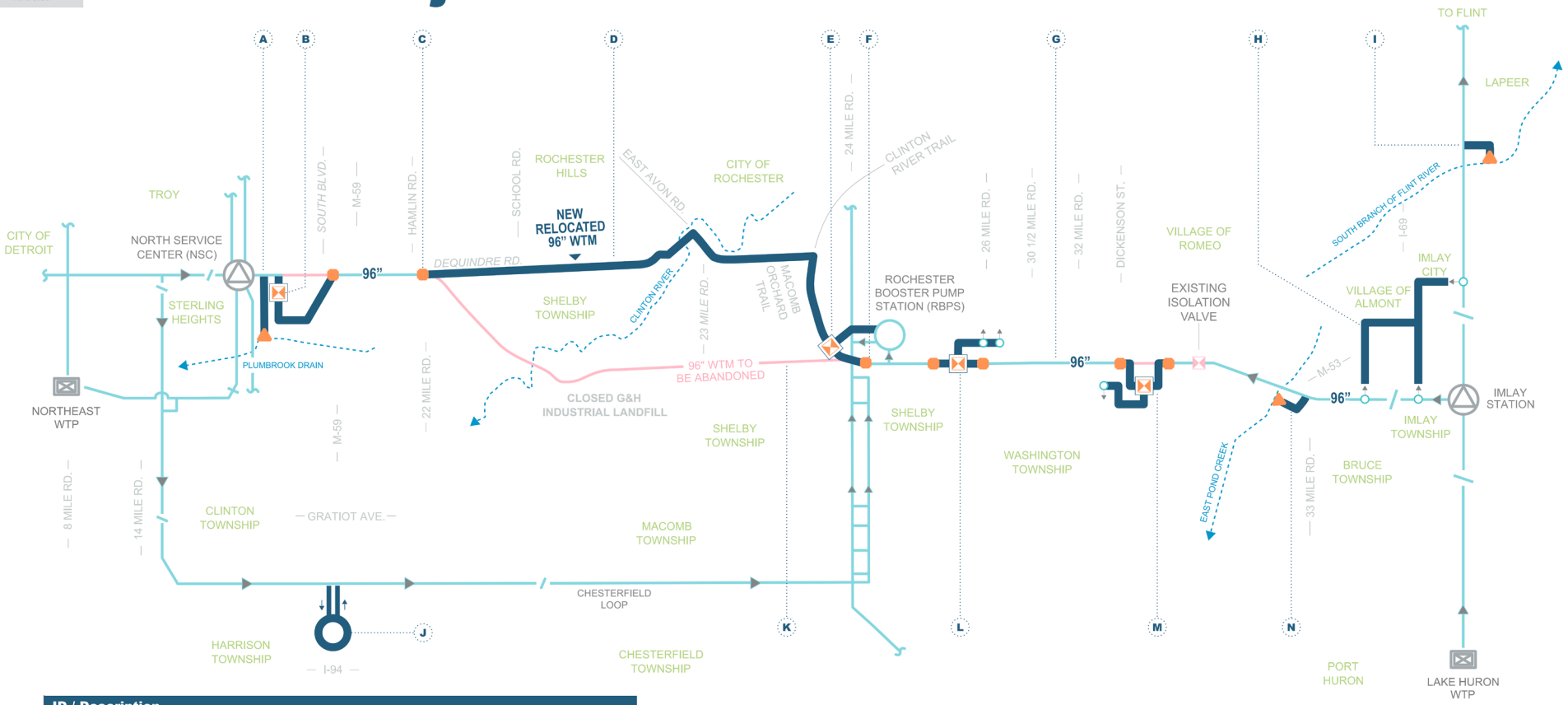
- Coordinate with other area infrastructure projects to minimize impacts.
- Improve traffic flow and pedestrian safety by making transportation enhancements.
- Design and construct infrastructure to support temporary shutdown of 96-inch WTM.

Project Overview

Project includes the following components:

- Construct approximately 2.5 miles of 96-inch diameter water transmission main
- Construct 4 valve vault stations equipped with 84-inch diameter isolation valves at locations along existing 96-inch water transmission main
- Design, build and operate a temporary water booster pumping station to maintain uninterrupted water service during construction
- Build and operate 3 water discharge facilities during construction
- Construct roadway improvements, including a new roundabout in coordination with road authorities having jurisdiction
- Abandon approximately 2.2 miles of existing 96-inch diameter transmission main
- Rehabilitate or replace air/vacuum relief valves and blow off valves on existing 96-inch water main to facilitate its draining and filling

Project Overview Schematic



ID / Description			
A	PLUMBROOK DRAIN DISCHARGE FACILITY (PDDF)	H	INTERTIE WATER MAINS IMLAY CITY, ALMONT AND IMLAY TOWNSHIP
B	NEW NSC VALVE	I	72" WTM DISCHARGE FACILITY
C	96" WTM HAMLIN TIE-IN	J	CHESTERFIELD LOOP TEMPORARY BOOSTER PUMP STATION (CLTBPS)
D	NEW 96" WTM	K	ABANDONED 96" WTM
E	24 MILE VALVE WITH BYPASS TO ROCHESTER BOOSTER PUMP STATION	L	26 MILE VALVE WITH BYPASS TO METERED CONNECTIONS
F	96" WTM 24 MILE TIE-IN	M	ROMEO VALVE WITH BYPASS TO METERED CONNECTIONS
G	96" WTM CRITICAL APPURTENANCES (MULTIPLE LOCATIONS NSC TO DDV)	N	EAST POND CREEK DISCHARGE FACILITY (EPCDF)

LEGEND:

- EXISTING WATER MAIN (WATER TRANSMISSION MAIN OR "WTM")
- ABANDONED WATER MAIN
- NEW WATER MAIN
- EXISTING WATER TREATMENT PLANT (WTP)
- BOOSTER PUMP STATION WITH RESERVOIR
- EXISTING BOOSTER PUMP STATION
- FLOW DIRECTION DURING SHUTDOWN
- NEW ISOLATION VALVE
- ABANDONED ISOLATION VALVE
- NEW TIE IN
- NEW DISCHARGE FACILITY
- EXISTING METERED CONNECTION

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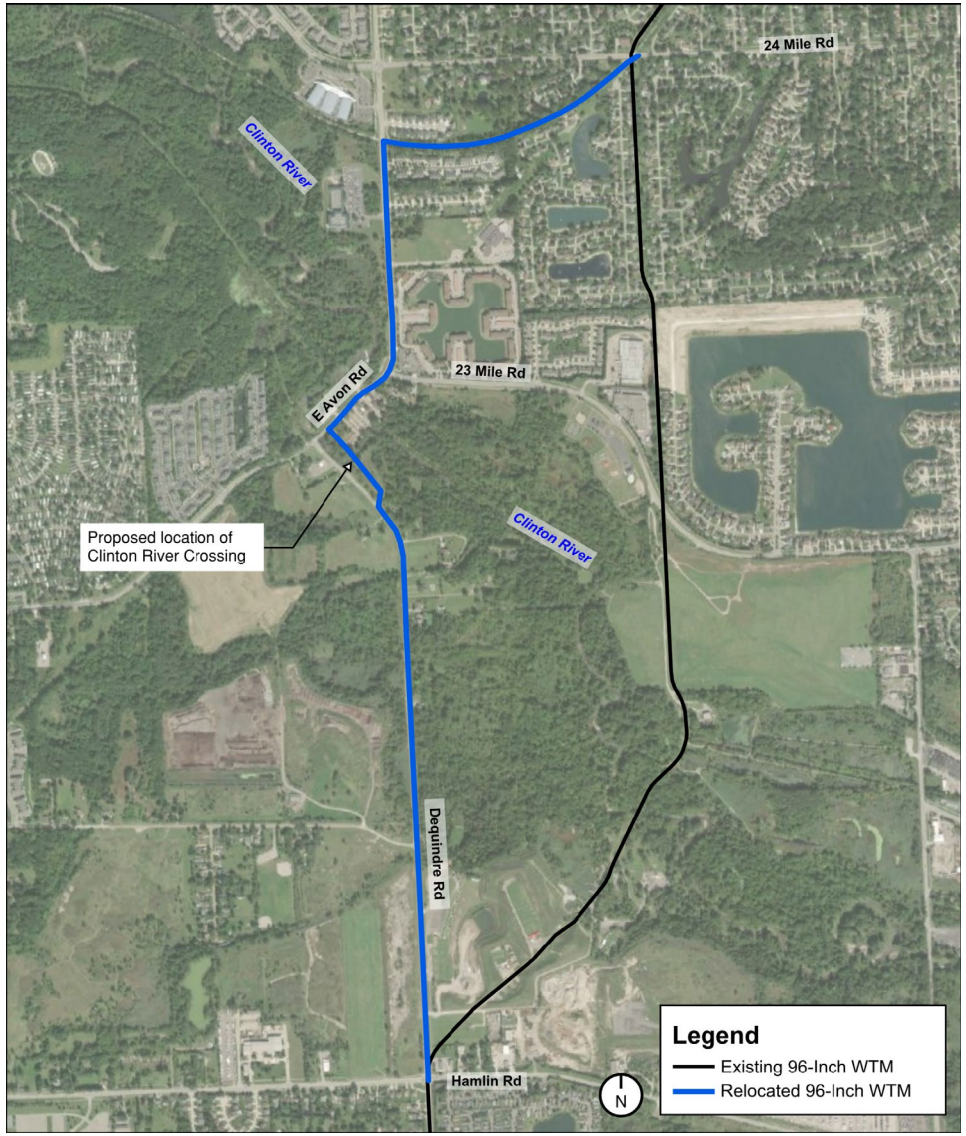
New 96-inch Water Transmission Main

- Approximately 2.5 miles (13,500 LF)
- Tie-ins at 24 Mile Road and Hamlin Road
- Mostly in roadway and Macomb Orchard Trail right of ways
- Open cut crossing of Clinton River



Implementation Alternatives

Eleven (11) implementation alternatives were developed and narrowed to four (4) considered for final selection:

Component	Alternative 2 (CLBPS with 26 Mile Road Pump Station)	Alternative 7 (Parallel Main)	Alternative 10 (96-inch Relocated Main "NSC Feed")	Alternative 11 (Extended Adams to Rochester Loop)
Relocate 96-inch WTM	X	X	X	X
Abandon Existing 96-inch WTM	X	X	X	X
96-Inch Main Appurtenances Rehabilitation	X	X	X	X
East Pond Creek Discharge Facility (EPCDF)	X		X	X
Plumbrook Drain Discharge Facility (PDDF)	X	X	X	X
South Branch Flint River Discharge Facility (SBFRDF)	X	X	X	X
Temporary Chesterfield Loop Booster Station		X	X	
Permanent Chesterfield Loop Booster Station	X			
Isolation Valve: Romeo	X	X	X	X
Isolation Valve: 26 Mile Road	X		X	X
Isolation Valve: North Service Center	X	X	X	X
Full Parallel Main - Rochester BPS to BU-01		X		
Rochester Loop/Adams Rd Pipeline				X
Rochester West and WG-02 Laterals-Main				X

Engineer's Opinion of Cost Breakdown

Project Costs of Final Implementation Alternatives:

Category	Alternative 2	Alternative 7	Alternative 10	Alternative 11
Total Project Cost	$186,803,000	$253,921,000	$170,361,000	$269,262,000
Selected Alternative	No	No	Yes	No

Estimated Planning-level Cost of Selected Implementation Alternative 10 (96-inch Relocated Main "NSC Feed":

Item	Alternative 10 Estimated Planning-level Cost ($)
Member Partner Backup Systems	$2,169,000
Design, Permitting, Assistance During Construction	$26,635,000
CMAR Pre-Construction Services	$500,000
Opinion of Probable Construction Cost	$141,057,000
Total Project Cost	**$170,361,000**

Implementation Schedule

Following is list of key project milestones:

• Award of Construction Contract (CMAR):	Q4 2021
• Pipeline Construction Start:	March 2022
• Final Design Package to GLWA:	Q3 2022
• Start First Pipeline Shutdown:	October 15, 2024
• New, Relocated Pipeline in Full Service:	April 15, 2025
• Contract Completion:	November 2027 (includes 1 year of project closeout)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