

Water Operations

Water CIP Highlighted Projects

Pete Fromm – Manager
Water Engineering



Phase II – 14 Mile Road Transmission Main Loop

CIP No. 122013

Contract No. 1802448: Design, C.A, and RPR

Contract No. 2004456: Construction

Project Type: Design-Bid-Build



Project Manager: Vittoria Hogue

PROJECT DESCRIPTION

The existing 14 Mile transmission main is a single line that supplies drinking water to the communities of Novi, Farmington Hills, West Bloomfield, Commerce, Walled Lake, and Wixom. If a disruption to service occurs on the 14 Mile transmission main (e.g., air valve break, blow-off valve break, water main break), then these communities would experience substantial loss in water pressure or complete loss of supply depending on the severity of the disruption. To provide redundancy in this area, a new parallel transmission main along 14 Mile Road west of M-5 (Phase I), and a new transmission main that connects the 14 Mile Road and 8 Mile Road transmission systems together (Phase II) is being constructed.

The construction under the phase II contract consists of installing approximately 7.5 miles of 54-inch transmission main between 8 mile and 14 Mile, yard piping and reservoir fill line improvements at Haggerty Booster Station, and installation of a control valve to regulate flows to and from the Fourteen Mile Road Transmission System. The construction will involve seven (7) tunnels under or adjacent to MDOT highways I-275, I-96, and M-5.



CIP COST AND SCHEDULE SUMMARY

Contract No. 1802448 – Cost (Design)

Total Contract Amount:	\$9,632,616.00
Total Billed to Date (July '22):	\$7,180,534.00
Percentage of Completion:	75%

Contract No. 2004456 – Cost (Construction)

Total Contract Amount:	\$92,468,705.00
Total Billed to Date (July '22):	\$16,426,976.00
Percentage of Completion:	18%

CIP Schedule

Contract Start Date (Design)	March 12, 2019
Scheduled Finish Date (Design)	January 12, 2025
Contract Start Date (Con.):	October 10, 2021
Scheduled Finish Date (Con.):	February 20, 2024

MARCH/JUNE 2022

*Pipeline being installed along M-5
between 13 & 14 Mile Roads*



Trench back fill



APRIL 2022

Launch Shaft excavation for M-5 Tunnel



Inside Tunnel Launch Shaft



JUNE 2022

Pipe Installation along 1 4 Mile Road east of M-5 heading towards Haggerty Pump Station



AUGUST 2022

Micro Piles



Yard Piping, Valves and Venturi Meters Replacement at Water Works Park Plant

CIP No. 115001

Contract No. CS-055: Design, C.A., and RPR

Contract No. 2000610: Construction

Project Type: Design-Bid-Build

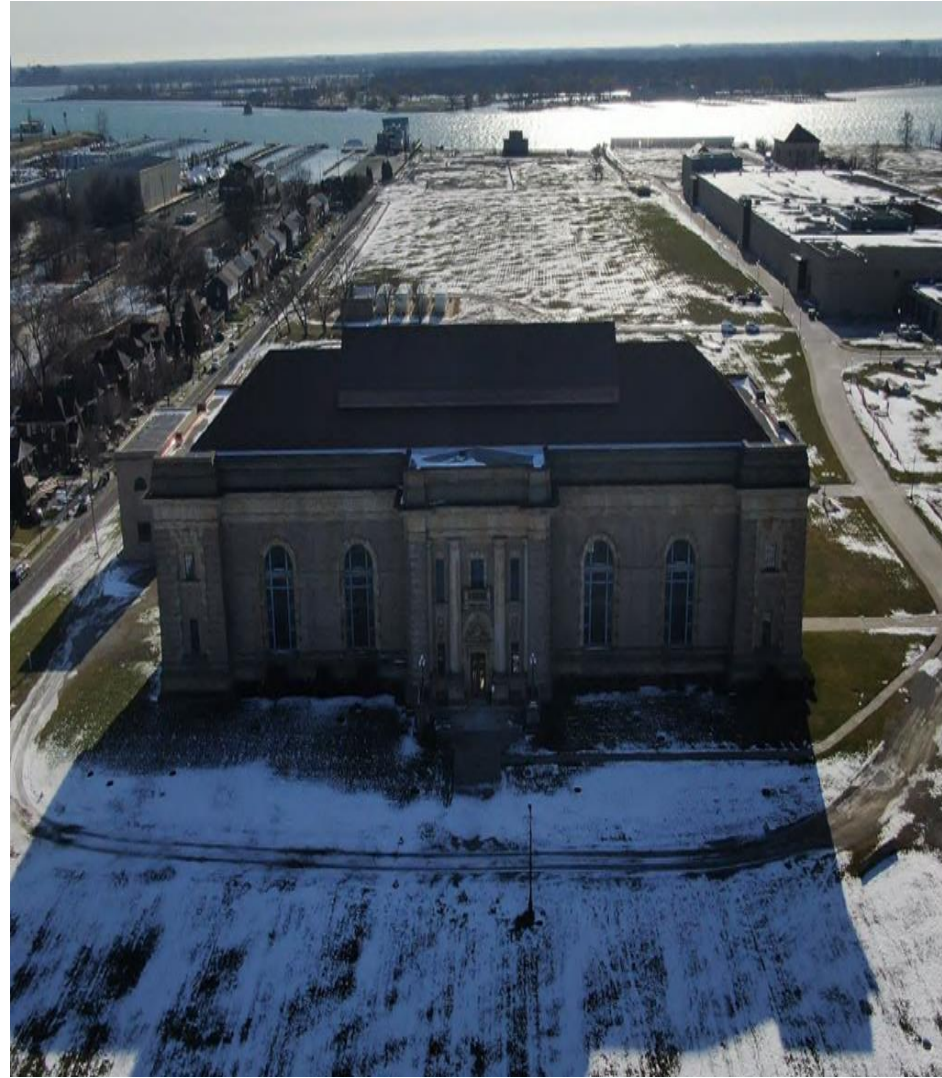


Project Manager: Jacob Mangum P.E.

PROJECT DESCRIPTION

Water Works Park Water Treatment Plant (WWP) services the low- and intermediate-pressure districts in GLWA's water transmission system. Finished water leaves the high lift pumping station via six header pipes and connects to fifteen distinct water transmission mains. Due to the age and unknown condition of a significant portion of this yard piping and associated isolation valves, the convoluted existing pipe configuration, and unreliable metering of finished water flow into the transmission system, it was necessary to replace the yard piping, valves, and venturi meters at WWP.

The scope of work for this project involves the replacement of four of the header pipes with spiral welded steel pipe, four venturi meters, and twenty-seven isolation valves. The new pipe configuration provides a simplified layout that increases redundancy in piping and metering. Two new pressure regulating stations provide an interconnect between the low – and intermediate-pressure districts. Piping, valve, and venturi meter replacement is broken down into the eastern and western portion to ensure consistent water supply to the system during the entire construction duration. There is a new site entrance/exit and security station.



CIP COST AND SCHEDULE SUMMARY

Contract No. CS-055 – Cost (Design)

Total Contract Amount:	\$5,598,494.00
Total Billed to Date (July '22):	\$2,945,158.00
Percentage of Completion:	53%

Contract No. 2000610 – Cost (Construction)

Total Contract Amount:	\$49,467,913.00
Total Billed to Date (July '22):	\$10,008,181.00
Percentage of Completion:	20%

CIP Schedule

Contract Start Date (Design)	June 26, 2017
Scheduled Finish Date (Design)	March 1, 2026
Contract Start Date (Con.):	October 19, 2020
Scheduled Finish Date (Con.):	Sept. 13, 2025

EXISTING CONDITIONS PRIOR TO PROJECT START

Existing Site Entrance to Water Works Park



Water Works Park High Lift Pumping Station



APRIL 2021

*Installing 12" PVC Storm Lateral for
new Security Station*



*Preparing 21AA Stone Base for new
roadways*



JUNE 2021

*New road wire basket installation with
new curbs on roadway*



Swing Arm Gate foundation



AUGUST 2021

Fine grading, compacting and setting the wire basket for paving new roadways



Potholing investigation for location of existing water mains



JANUARY 2022

New Water Works Park Security Entrance as seen from Jefferson Ave



New Water Works Park Security Entrances as seen from the plant grounds



MARCH 2022

48-inch Linestop Cutter Head



Tapping Unit Installed for Linestop



JUNE 2022

Installing Pipe Cap at site IP-10



JULY 2022

Removing Valve from Valve Vault "JJ"

Header pipe IP-05 at High Lift Pumping Station



JULY 2022

Removing concrete forms from the footer for structure M-06



Installing pipe stubs on the venturi Meter at structure M-05



A high-speed photograph of a water splash, showing a wave of water moving from left to right, with many small bubbles and droplets visible. The water is a deep blue color, and the background is a lighter blue gradient.

Questions?

Thank you!