



# Water Operations Water CIP Highlighted Projects

*Grant Gartrell, P.E.*

*Director of Water Engineering*

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# CIP No. 114008

Springwells 1930  
Sedimentation Basin Sluice  
Gates, Guides, and Hoist  
Improvements

*Project Manager: Pete Fromm*



# CIP 114008 Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
CS-272	AECOM	\$126,891.00	\$24,456.00	19%	8/10/20	5/27/22	85%
CS-259	Ruby	\$ 22,777.00	\$ 22,777.00	100%	6/7/18	6/6/20	100%
1802774	Kokosing	\$13,703,000.00	\$10,904,058.00	80%	5/28/19	5/27/22	76%
Total		\$13,852,668.00	\$10,951,291.00	79%	-	-	-

# Springwells 1930 Sedimentation Basin Sluice Gates, Guides, and Hoist Improvements



CIP 114008

# Existing Sluice Gate and Thimble (2019)



# 12 Air Vents Rebuilt with New Access

*Existing Air Vent (2019)*



*New Air Vent (2021)*



# 4 Basin Ingress/Egress Staircases Rebuilt

*Demo of Staircase Basin #1 (2020)*

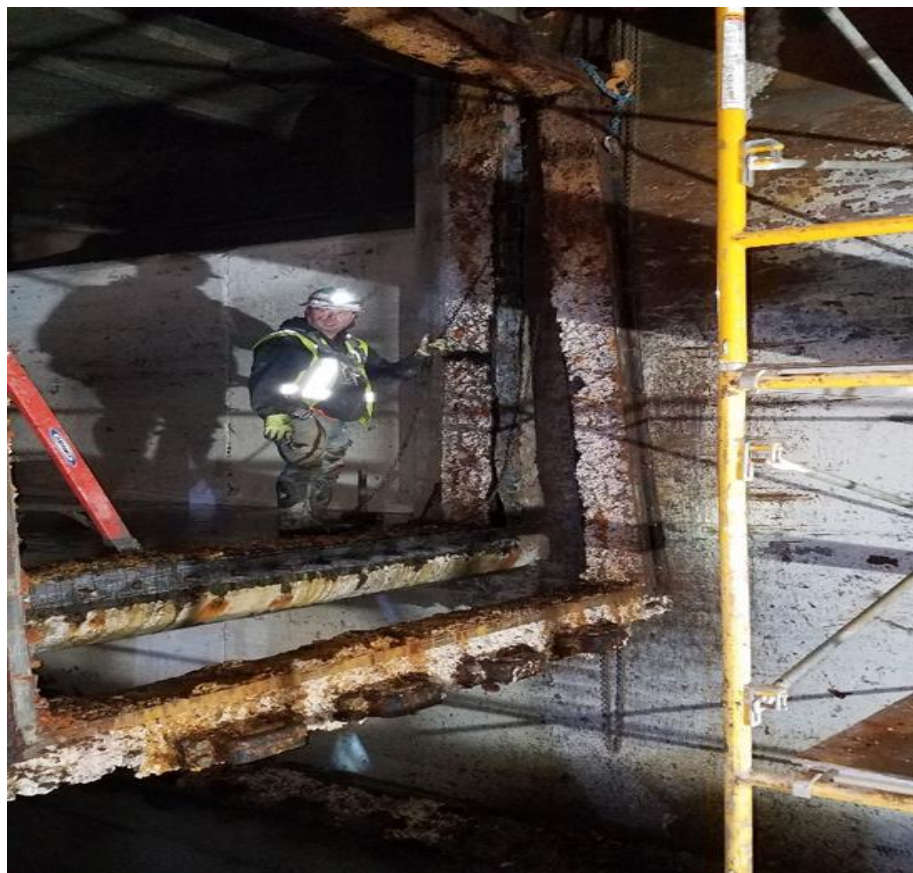


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*New Staircase (2021)*



## Removal of frame at Basin #1





# New Sluice Gates to Site

*Handling New Gate Frame (2020)*



*Handling New Gate (2020)*



CIP 114008

# 8 New Sluice Gates (2021)



# CIP No. 113002

Southwest High Lift Valve  
Operations Replacement



*Project Manager: Shakil Ahmed*



# CIP 113002 Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
CON 281	Weiss	\$5,271,632.00	\$ 4,890,289.00	93%	10/01/2018	11/01/2021	95 %
CS-034	Tetra Tech	\$ 665,352.00	\$ 645,247.00	97 %	01/16/2017	11/01/2021	97 %
Total		\$ 5,936,984.00	\$ 5,535,537.00	95%	-	-	-

# SW High Lift Pump Discharge Valve Actuators Replacement

*Old Oil Hydraulic Actuator (typical)*



*Old Oil-Pneumatic Tank*



## 3 New Electric-Motor Actuators Installed



# SW High Lift Pump Discharge Valve Actuators Replacement

*New High-Lift Header & Structural Framing*



## Tie-in for 3<sup>rd</sup> Header





# Valve #6 Underground Pit



# Valve #6 Underground Actuator being removed



# New Butterfly Valve Actuator installed



# CIP No. 122006

## Wick Road 48-inch Water Transmission Main



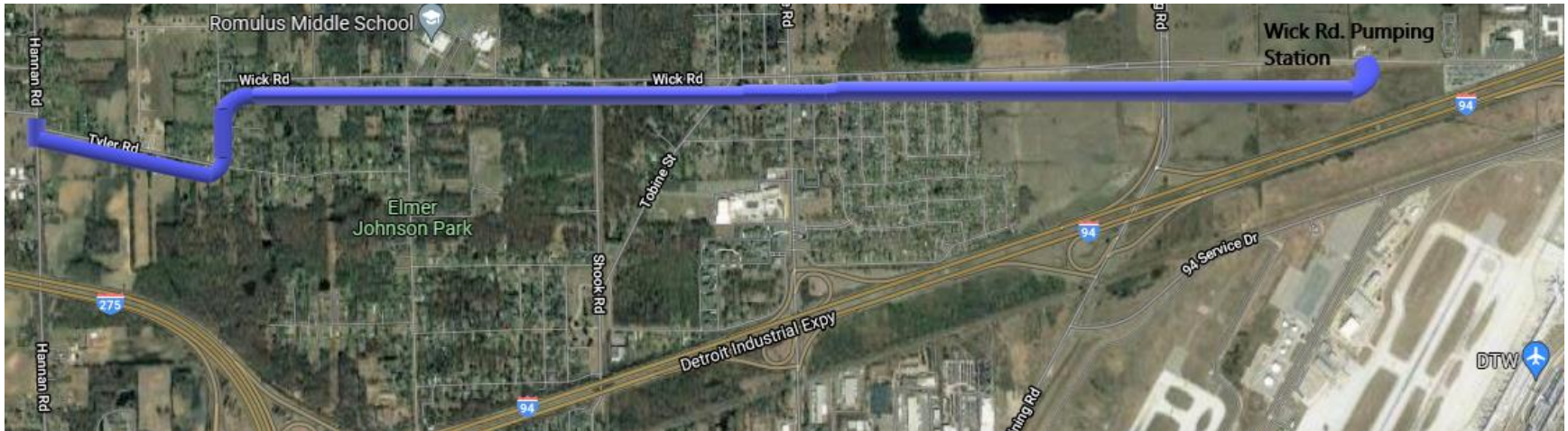
*Project Manager – Corey Brecht*



# CIP 122006 Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
1803621	Ric-Man	\$ 22,179,512	\$16,539,906	75%	8/26 /19	12/31 /21	82%

# Project Metrics



- Installed roughly 17,000 LF of 48-inch PCCP pipe on Hannan, Tyler and Wick Road in Romulus, Michigan completing the parallel mains from Wick Road Pumping Station to Ypsilanti Pumping Station after project commissioning
- Installation of five (5) 48-inch Isolation Gate Valves
- New redundant 16-inch feed provided to Romulus meter RS-06 off the newly installed 48-inch main
- Installation of three (3) 42-inch Isolation Gate Valves on the existing 42-inch main on Wick Road: Will be completed during GLWA's 2021 Low Demand Season
- Three (3) locations of interconnections with the existing 42-inch main and new 48-inch main will increase GLWA's transmission system resiliency while proving the ability to perform future maintenance while continuing undisturbed service to member partners.

# 48" PCCP Pipe installation along Wick Rd



# Wick Road and Wayne Road Intersection



Great Lakes Water Authority  
Ric-Man Construction  
Wick Road 48 Inch Water Transmission Main



# CSX RR Crossing: Permeation Grouting Operations



GLWA to tunnel 250-LF under the CSX Railroad  
after Permeation Grouting Activities

# CSX RR Crossing Permeation Grouting Tubes



Great Lakes Water Authority  
Ric-Man Construction  
Wick Road 48 Inch Water Transmission Main

# Tyler Road Restoration



Great Lakes Water Authority  
RIC-Man Construction  
Wick Road 48 Inch Water Transmission Main

# Wick Road Restoration: Asphalt Wearing Course



Great Lakes Water Authority  
Ric-Man Construction  
Wick Road 48 Inch Water Transmission Main

# CIP No. 114011

Springwells Water  
Treatment Plant Steam,  
Condensate Return, and  
Compressed Air Piping

*Project Manager: Brian VanHall*



# CIP Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
CON-252	Clark Construction Company	\$ 23,601,341	\$ 18,610,922	79%	02/01/19	08/01/22	71%
CS-1671	Metco	\$ 1,532,122	\$ 1,083,791	71%	05/18/16	02/18/23	77%
Totals		\$ 25,133,463	\$ 19,694,713	-	-	-	-

# Project Scope Highlights

- 12 buildings are involved in this project
- 1,100 feet of compressed air piping
- 1,100 feet of natural gas piping
- 15,500 feet of steam piping
- 18,600 feet of condensate piping
- 208 radiators

# Deaerator Replacement in Turbine House

*Before*



*After*





# Surge Tank Replacement in Turbine House

*Before*



*After*



# Radiator Replacement in Turbine House

*Before*



*After*



# Condensate Pump Work in Maintenance Building

*Before*



*After*



# Piping and Relief Valve Improvements in Boiler House

*Before*



*After*

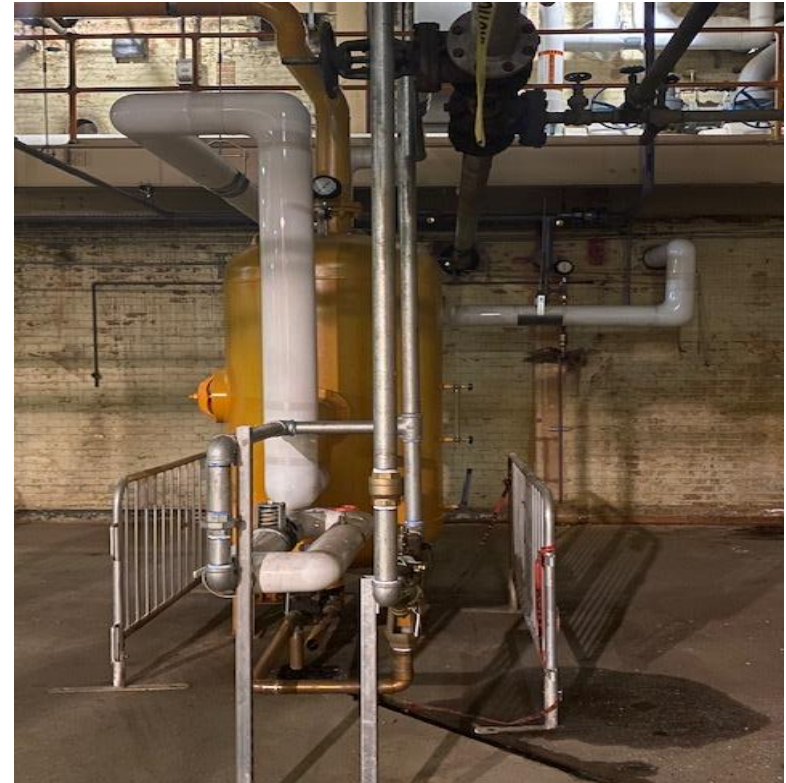


# Blow-Down and Air Tank Work in Boiler House

*Before*



*After*



# Steam Header Improvements in the Maintenance Building

*Before*



*After*



# Steam Pressure Reducing Station Replacement in the Turbine House

*Before*



*After*



# CIP 122011

## Park-Merriman Road Water Transmission Main



*Project Manager: Pete Fromm*





# CIP Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
CS-259	Somat	\$320,450	\$242,582	75%	1/25/18	12/17/21	92%
CS-272	AECOM	\$151,160	\$57,598	38%	10/19/20	12/17/21	74%
1802775	Salenbien	\$9,164,380	\$7,977,413	87%	3/11/19	12/17/21	89%
Total	-	\$9,635,990	\$8,244,593	86%	-	-	-

# Aerial View of Project location



# Excavation for New 24-inch Transmission Main



# Park-Merriman 24-Inch Transmission Main

*Excavation for 24-Inch Transmission Main*



*Staging of New 24-Inch Transmission Main*



## Directional Drill under Lower Rouge River-1,200LF



# Park-Merriman 24-Inch Transmission Main

*Digging Receiving Pit for Directional Drill*



*Installation of 24-Inch Transmission Main*



# Park-Merriman 24-Inch Transmission Main

*Jack and Bore under Michigan Ave.*

*Jack and Bore under Michigan Ave.*



## Installation of 12-Inch bypass at WL-03 Meter Pit





# Park-Merriman 24-Inch Transmission Main

*Installation of 24-Inch Transmission Main*



*Backfill of 24-Inch Transmission Main*



# Park-Merriman 24-Inch Transmission Main

*Installation of New WY-02 Meter Pit*



*Installation of New WY-03 Meter Pit*



## Restoration of Merriman Road



# CIP No. 170800

## System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation



*Project Manager: John McCallum, P.E.*



# CIP Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
CS-151A	Hazen & Sawyer	\$ 2,774,692	\$1,545,320	56%	12/7/18	1/17/25	48%
1900744	Pullman SST	\$ 21,597,998	\$ 9,886,383	46%	11/21/19	1/19/25	34%
Totals		\$	\$ 11,431,703	-	-	-	-

# Project Scope Highlights

- 4 finished water reservoirs have been rehabilitated to date
- Concrete Spalls repaired – 2,041 square feet
- High performance paint – 107,000 square feet
- Roofing membrane installed – 23,042 square feet
- Concrete cracks repaired – 38,121 lineal feet ( approximately 7.2 miles )

# Imlay Booster Station 18 Million Gallon Reservoir

*Before*



*After*



# Springwell WTP 20 Million Gallon Reservoir No. 3 - Valve Operator Bases

*Before*



*After*





## Springwells Reservoir No.3 – Expansion Joint falling off

*Before – April 2021*



*After – May 2021*



## Lake Huron WTP- Reservoir #3 Diver operation to achieve isolation



## Lake Huron WTP- Reservoir #3 Interior of 15 Million Gallon Finished Water Reservoir

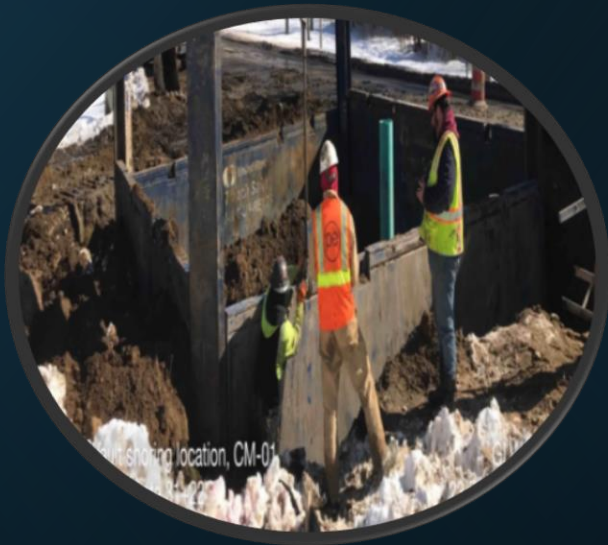


## Southwest WTP Reservoir No. 3 10 million Gallon Steel Reservoir Rehabilitated



# CIP No. 122013

## 14 Mile Transmission Main Loop



*Project Manager: Sara Mille*



# CIP Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
1802448- 14 Mile Loop TM Design Services	Brown and Caldwell	\$9,632,616	\$5,916,225	61	3/12/2019	1/12/2025	42%
1903312- Phase I Construction	Major Cement	\$5,978,000	\$3,879,430	65%	8/10/2020	8/15/2022	52%
2004456- Phase II Construction	Rick-Man/Clark JV	\$92,468,705	-	-	-	-	0%
1903315- Phase I valve purchase	HESCO	\$213,744	\$213,744	100%	12/12/2019	12/12/2021	100%
Phase II valve purchase	Kennedy valves, Mokveld Valves, Cascade Consulting	\$1,989,711	-	-	9/2/2020	3/29/2024	28%
Totals		\$110,282,776	\$10,009,399	-	-	-	-

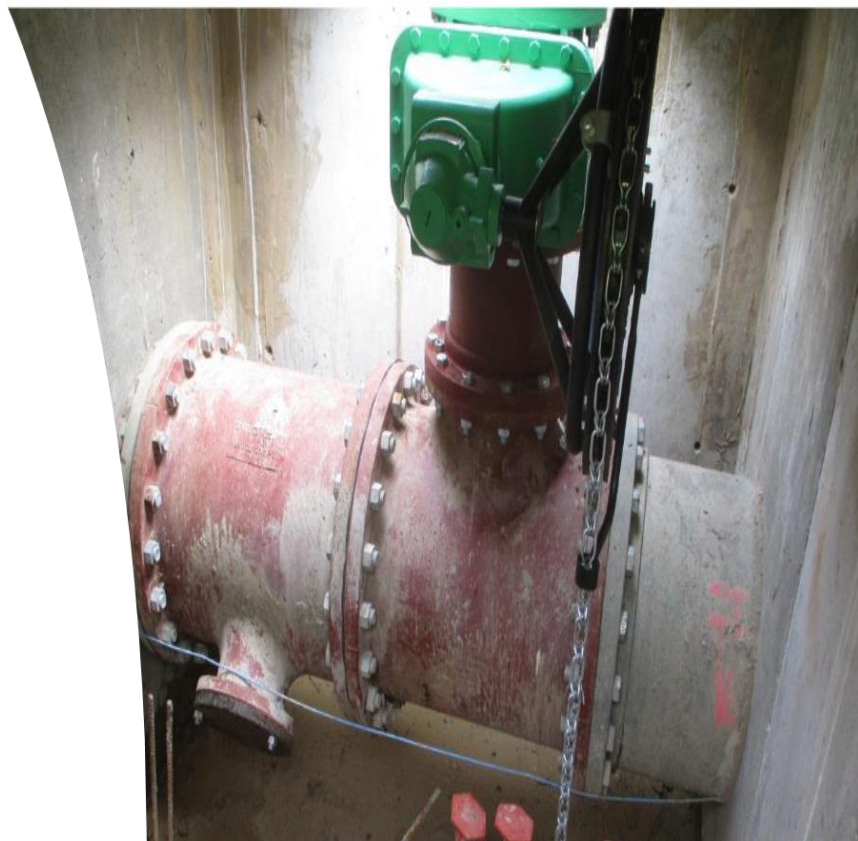
## Phase I construction- cast in place structure construction- valve vault



NV04 vault site conditions

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# Phase I construction- cast in place structure construction- blowoff





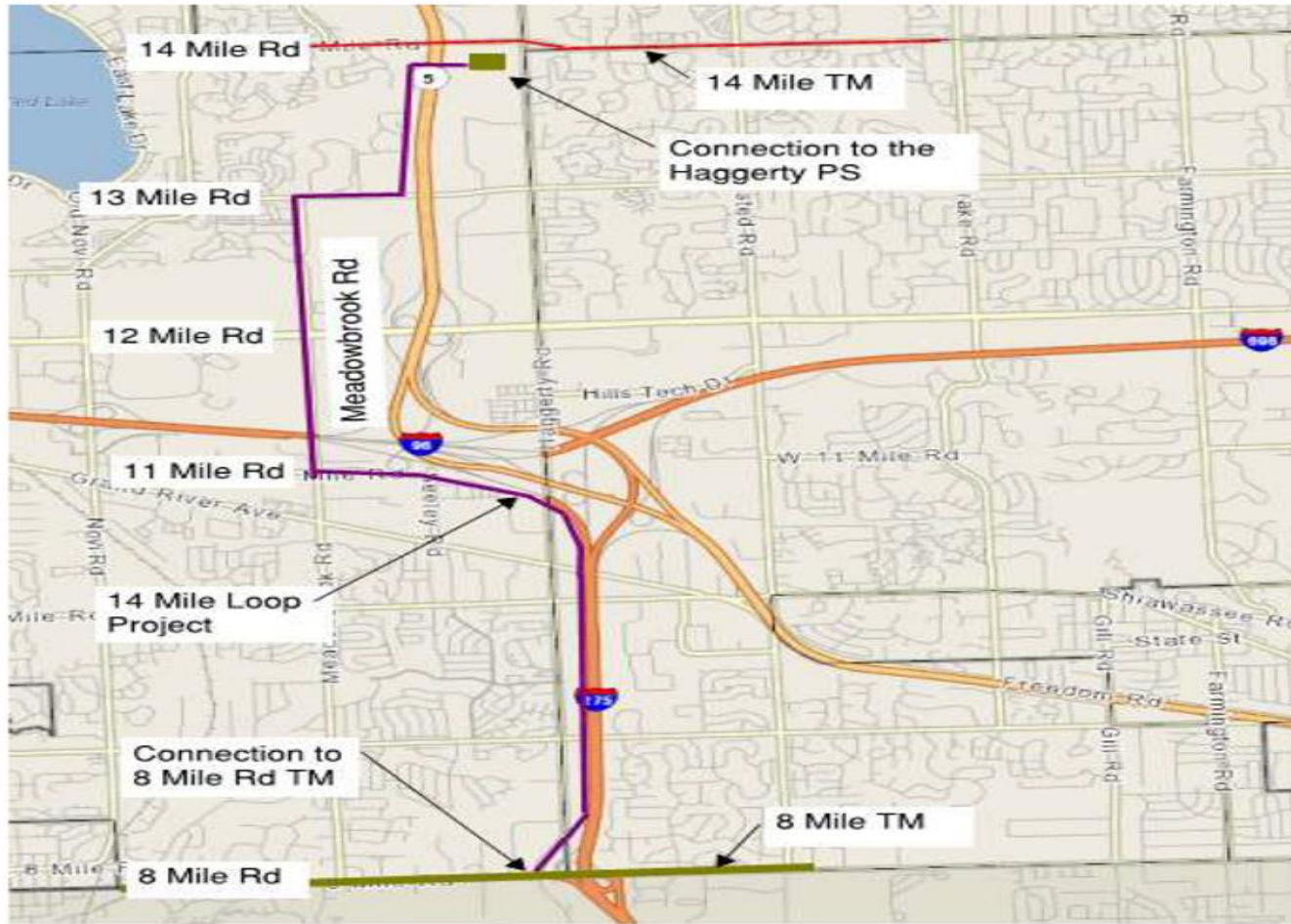
## Phase I Open Trench Pipe Installation



# Phase I- trenchless pipe installation-HDD

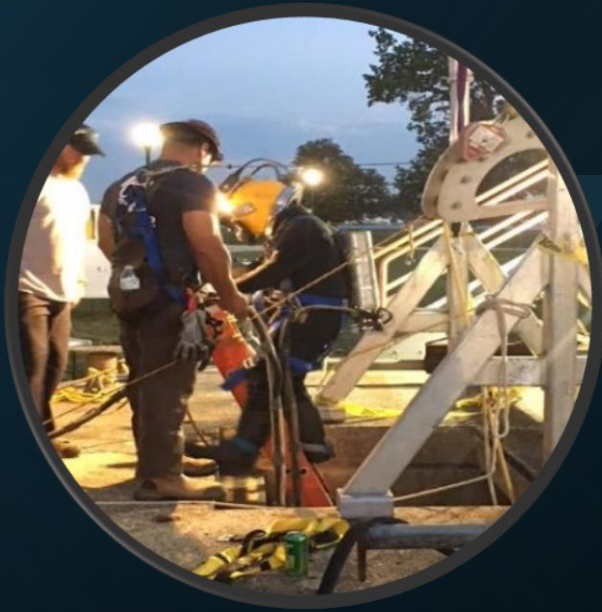


# Phase II- 54-inch,8-mile long



# CIP No. 116002

Design-Build  
Rehabilitation of  
Pennsylvania, Springwells  
and Northeast Raw Water  
Tunnels



*Project Manager: Nick Hoffman*



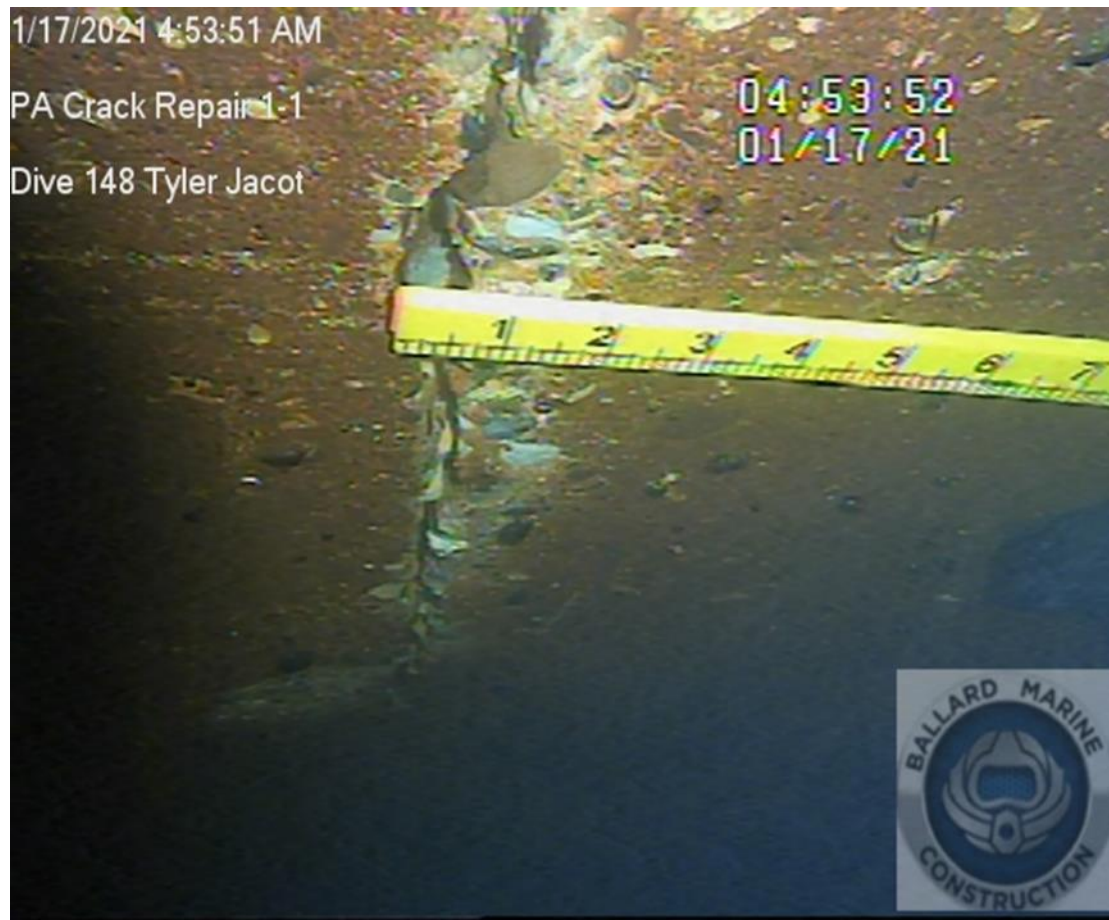
# CIP 116002 Related Contracts

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
DB-150	Ballard Marine Construction	\$ 94,577,477	\$ 28,799,258	30%	4 /28/20	3/28/25	26%

# Liner Plate Mockup



# Pennsylvania Tunnel Crack Repair Included 200-LF of polyurethane injected crack repair



# Tunnel Rehabilitation

## Drilling of 6-foot diameter casing for diver access





## Tunnel Rehabilitation

### Staging of 9-foot diameter permanent access shaft casing



