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Great Lakes Water Authority

Capital Improvement Program (CIP) Project Updates Wastewater Engineering

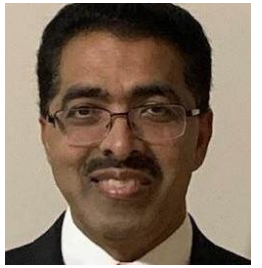
March 12, 2024 | Philip Kora, PE

Agenda

- CIP #: 211008 – Pump Station 1 Ferric & Complex B Sludge Line
- CIP #: 213009 – Biosolids Improvements
- CIP # 270001 – Pilot Netting Facility
- CIP # 222001 – Northwest Interceptor to Oakwood CSO Sewer (NOCSOs)

NOCSO=Northwest Interceptor to Oakwood CSO

Wastewater CIP Project STATUS



CIP #: 211008 Pump Station 1 Ferric and Complex B Sludge Lines

Project Manager: Philip Kora/Reed Johnson
Project Delivery Method: Design Bid Build
Project Status: Construction Closeout
CIP Score: 78.3

We Are Here

Master Plan → BCE/CIP → Study → RFP → Design → Procurement → Construction

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•1802543 (Design)	•Hazen & Sawyer	•$2.3 Million	•$2.1 Million	•91%	•5/22/2019	•6/12/2024	•95%
•2002190 (Construction)	•Weiss	•10.1 Million	•$9.1 Million	•90%	•4/5/2021	•6/12/2024	•91%

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BCE=Business Case Evaluation
RFP=Request for Proposal

Wastewater CIP Project INFO

CIP #: 211008 Pump Station 1 Ferric and Complex B Sludge Lines

- **Project Scope of Work/Goals**
  - Install ferric chloride tank, pumps and piping to Pump Station 1 to allow continuing phosphorus reduction for permit compliance.
  - Chemically/mechanically remove vivianite clogging of sludge line from Complex B to Complex A.
- **Significance/Need/Background**
  - The existing ferric chloride system was in poor condition, requiring replacement that is needed for permit compliance.
  - Clogging of the sludge line significantly challenged the ability to pump & ultimately dispose of solids as needed for permit compliance.

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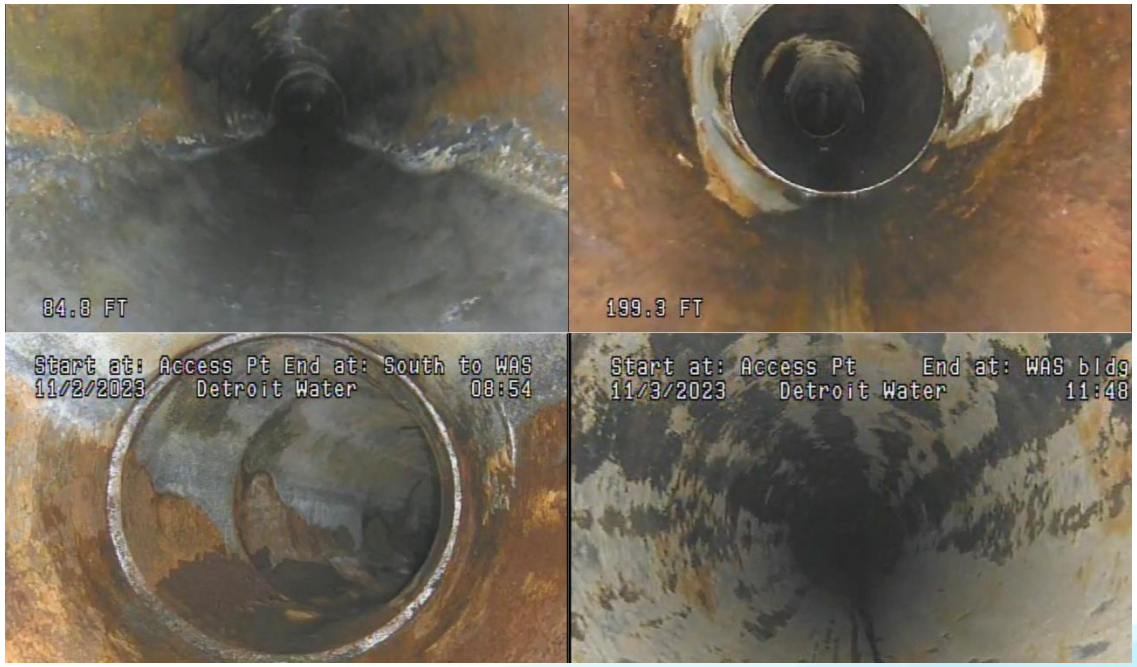
Wastewater CIP Project PHOTOS

CIP #: 211008 Pump Station 1 Ferric and Complex B Sludge Lines

Pre-Contract Photos (900 GPM)

Currently (2700 GPM)



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GPM =Gallons Per Minute

Wastewater CIP Project PHOTOS

CIP #: 211008 Pump Station 1 Ferric and Complex B Sludge Lines

Pre-Contract Photos

Currently

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Wastewater CIP Project PHOTOS

CIP #: 211008 Pump Station 1 Ferric and Complex B Sludge Lines

New Ferric Chloride Tanks

New Chemical Room with skids

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Wastewater CIP Project STATUS

CIP #: 213009 Biosolids Improvements Project

Project Manager: Chris Nastally

Project Delivery Method: Study, RFP, Design, RFB, Build

Project Status: Study RFP Advertised

CIP Score: 79.6

We Are Here

Master Plan & BCE → RFP → Study → RFP → Design → Procurement → Construction

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
• 2300949 (Study)	• TBD	• TBD	• N/A	• N/A	• TBD (established 11/2024)	• TBD (established 11/2026)	• N/A

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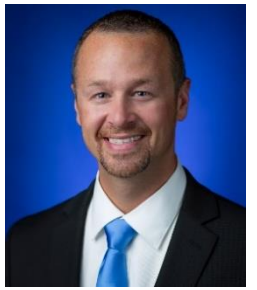
BCE=Business Case Evaluation
RFB = Request for Bid
RFP = Request for Proposal

Wastewater CIP Project INFO



CIP #: 213009 Biosolids Improvements Project

- **Project Scope of Work/Goals**
  - Address best biosolids process to be implemented that addresses current and future biosolids requirements and permits
  - Complete minimum design info, site layouts, environmental assessment
  - Coordinate and collaborate with member partners
  - Identify renewables, energy recovery, and process requirements for selected alternatives
- **Significance/Need/Background**
  - Currently, we dispose of solids in 3 ways (BDF, Incineration, COF)
  - Maintenance & Operations expensive, extensive, difficult for all 3 (division of resources, knowledge, experience)

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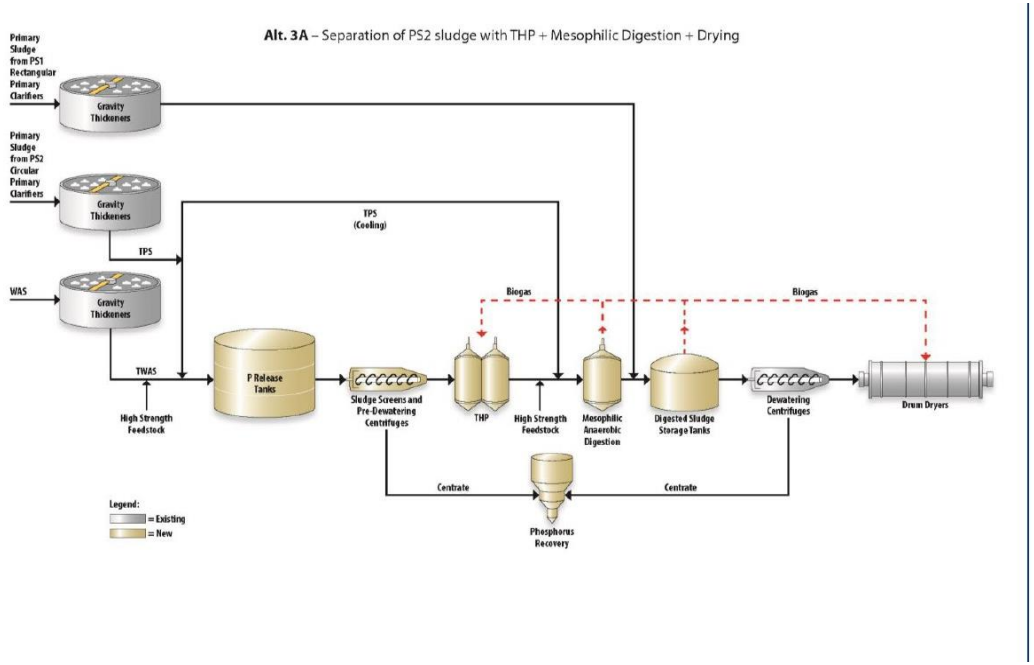
BDF=Bio-Solids Dryer Facility
COF Central Offload Facility

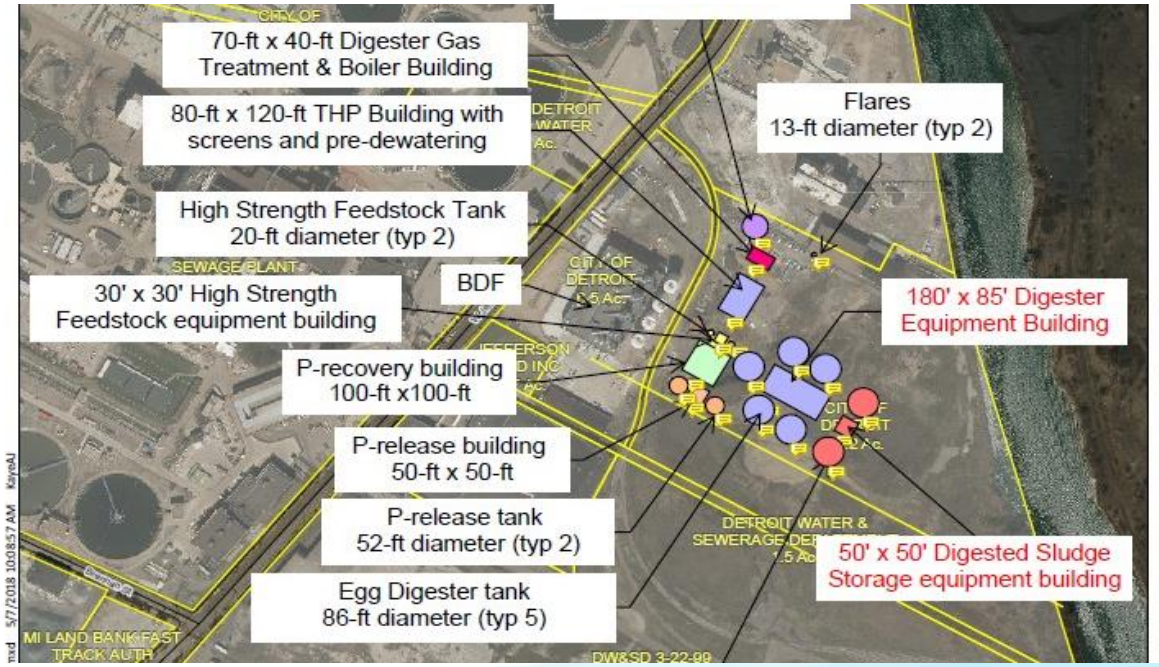
Wastewater CIP Project PHOTOS

CIP #: 213009 Biosolids Improvements Project

WWMP – Option 3A PFD



WWMP – Option 3A Site



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WWMP=Wastewater Master Plan
PFD=Process Flow Diagram

Wastewater CIP Project STATUS

CIP #: 270001 Pilot Netting Facility Project

Project Manager: Vincent Genco

Project Delivery Method: Design Bid Build

Project Status: RFP Development (provide to procurement end of March)

CIP Score: 89.6

We Are Here

Master Plan → BCE/CIP → RFP → Study / Design → Procurement → Construction

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•TBD (Design) •(TBD) (Construction)	•TBD •TBD	•TBD •TBD	•N/A •N/A	•N/A •N/A	•TBD (established Q4 2024) •TBD	•TBD •TBD	•NA •N/A

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BCE=Business Case Evaluation
RFP = Request for Proposal

Wastewater CIP Project INFO

CIP #: 270001 Pilot Netting Facility Project

- **Project Scope of Work/Goals**
  - **Study & Design of Pilot Netting Facility**
  - **Coordination with MDOT and FHA for funding/Environmental Assessment**
  - **Identification of location for nets, disinfection, odor controls, sampling**
  - **Goal is to inform future netting projects/screen/disinfect CSOs to meet permit**
  - **Project is being funded by MDOT up to ~$37 Million!!**
- **Significance/Need/Background**
  - **Advance Long Term CSO NPDES Permit Requirements**
  - **Resolves 3 outfalls from LTCSO (high-priority non-core outfalls)**

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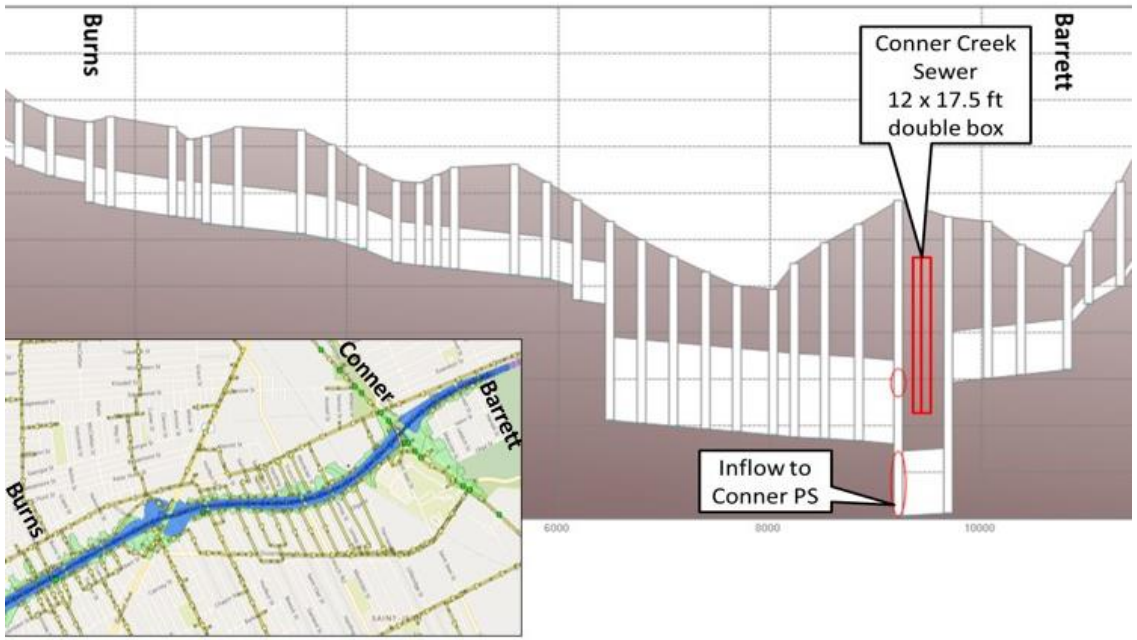
CSO=Combined Sewer Overflow
FHA=Federal Highway Administration
MDOT=Michigan Department of Transportation
NPDES=National Polluant Discharge Elimination System
LTCSO=Long Term CSO Control Plan

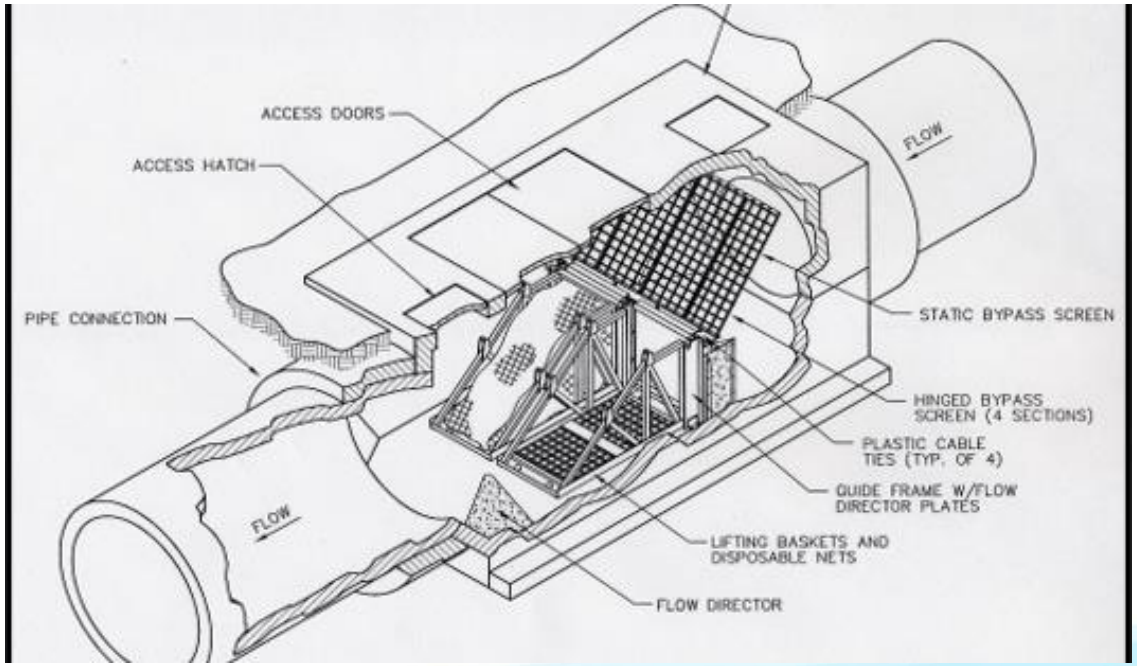
Wastewater CIP Project PHOTOS

CIP #: 270001 Pilot Netting Facility Project

I-94 Modernization Project



In-line Netting Facility



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Wastewater CIP Project STATUS

CIP #: 222001 Northwest Interceptor to Oakwood CSO Sewer

Project Manager: Vincent Genco

Project Delivery Method: Design Bid Build

Project Status: Construction Procurement

CIP Score: 62.7

We Are Here

Master Plan | BCE/CIP | Study | RFP | Design | Procurement | Construction

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•2002655 (Design) •2204064 (Construction)	•FKE Engineering •TBD	•$5.69 Million •TBD	•$2.66 Million •$0	•46% •0%	•6/01/2020 •DATE	•7/02/2029 •DATE	•41% •TBD

GLWA Great Lakes Water Authority

BCE=Business Case Evaluation
CSO=Combined Sewer Overflow
RFP = Request for Proposal

Wastewater CIP Project INFO

CIP #: 222001 Northwest Interceptor to Oakwood CSO Sewer

- **Project Scope of Work/Goals**
  - Lower HGL in the Northwest Interceptor by diverting flow during high HGL to Oakwood
  - Utilize existing capacity within existing CSO Facility
  - Backup the WRRF during times of unexpected failures / high HGL
  - Construction 10’ diameter pipe (via tunneling) from NWI to Oakwood CSO wet well to achieve goals
- **Significance/Need/Background**
  - Masterplan goal – maximize use of existing infrastructure
  - High NWI HGL leads to SSO’s in Dearborn and untreated CSO’s for Wayne county and other member partners

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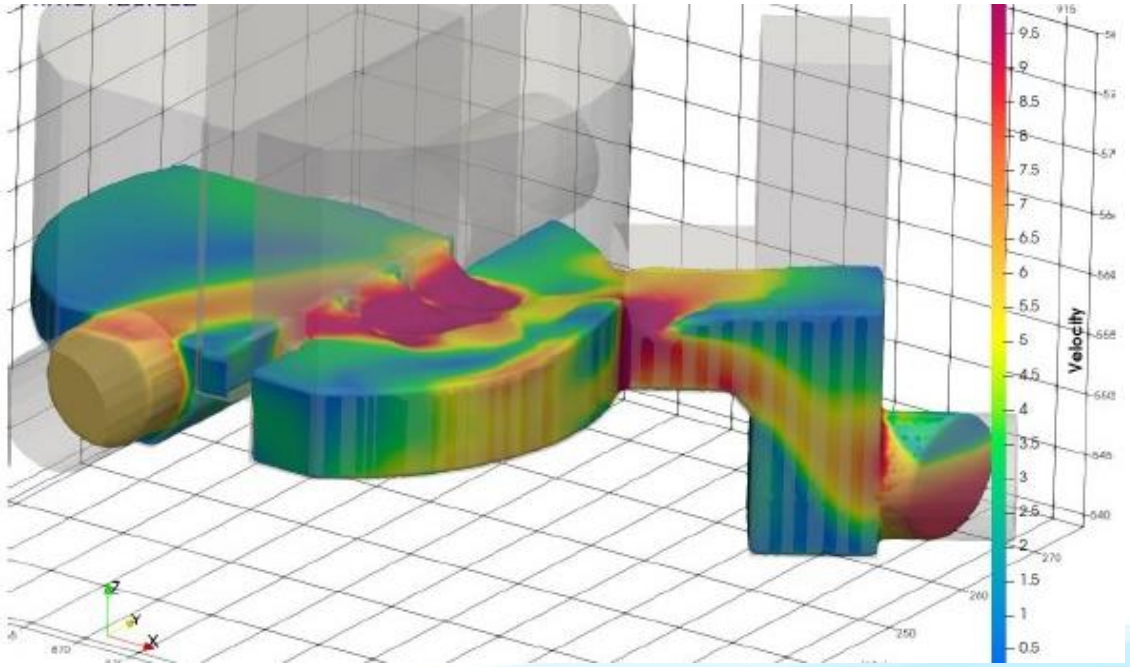
CSO=Combined Sewer Overflow
HGL=Hydraulic Grade Line
NWI= Northwest Interceptor
SSO= Sanitary Sewer Overflow

Wastewater CIP Project PHOTOS

CIP #: 222001 Northwest Interceptor to Oakwood CSO Sewer

Planned Route of NOCSOs

CFD @ Inlet Structure



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NOCSO=Northwest Interceptor to Oakwood CSO
CFD=Computational Fluid Dynamics

Questions and Contact

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