Michigan's Water Quality Event

92nd Annual Conference
Boyne Mountain - 2017

Steve Aiken
Regional Sales Manager
Presentation Represents:
• 41 Projects
• $96,655,900 Invested

All to improve Clean Water for the citizens of Michigan
Funding Sources:

$ 96,655,900

$ 47,021,400 SRF - 48.6%
$ 32,647,500 Local Funding – 33.8%
$ 16,655,000 Various Grant – 17.6
News From the Field
Benton Harbor St Joseph Wastewater Plant
Continued Sewer Separation in Grand Rapids

• Although the last sewage overflow point, under permit requirements, was eliminated in Grand Rapids in July of 2015, the City is continued to separate additional areas.
  
  • **Client:** City of Grand Rapids
  
  • **Consultants:**
    • Moore & Bruggink: CSO #27 Design and Construction Inspection
    • Black & Veatch: CSO #28A Design and Construction Management
  
  • **Contractor(s):** Georgetown Construction (CSO #27), Nagel Construction (CSO #28A)
  
• CSO Contract #27 and #28A included:
  
  • Sanitary sewer replacement (9,700 ft)
  • New storm sewers (5,500 ft)
  • Water main replacement (13,200 ft)
  • 2 urban rain garden
  • Porous pavement (9,200 sq yds)
  • 31 Infiltration Basins
  • Elimination of an additional 184 acres of combined sewers
Commemorative Plaque Dedication

- City dedicated a plaque at a ceremony held in April to commemorate the CSO Program and all those that worked on it over the past 30 years.
Great Lakes Water Authority (GLWA) Incinerator Improvements

- **Project:** Sewage Sludge Incinerator Air Quality Control Improvements at the Detroit WRRF
- **Client:** Great Lakes Water Authority (GLWA)
- **Design and Construction Inspection:** Black & Veatch, Wade Trim, Metco, PCI
- **Contractor:** Walsh Construction

This Design-Build project included air quality upgrades to eight (8) sewage sludge incinerators. Improvements include installation of new venturi scrubbers, replacement of induced draft (ID) fans and motors and addition of VFDs for the ID fans. The project was needed to meet 2016 Federal air quality MACT standards.
SEWAGE SLUDGE INCINERATOR AIR QUALITY CONTROL IMPROVEMENTS DESIGN/BUILD CONTRACT PC-791

To enable eight multiple heath incinerators at Incineration Complex II of GLWA WRRF to comply with MACT (Maximum Achievable Control Technology) air quality regulations for Sewage Sludge Incineration units as addressed in U.S. EPA Final Rule incorporated into 40 CFR Part 60
PC-791 Process Improvements

Project Schematic and Process Flow
Complex II Incineration

- Firm Capacity 260 dtpd (6 units in operation)
- Design/Build Contractor – Walsh Construction Company
- Funding Source – MDEQ State Revolving Fund
- Cost Estimate – $37,989,471
GLWA Rouge River Outfall Disinfection Project
PC-797 Update:

- **Project Players:**
  - Owner: Great Lake Water Authority (GLWA)
  - Engineer: CDM Smith
  - Contractor: CDM Constructors Inc.

- **Project Background:**
  - Upgrade to GLWA Water Resource Recovery Facility (WRRF) disinfection facility
  - Provide ability to disinfect flows up to 1,700 MGD
  - Includes disinfection for two outfalls

- **Project Delivery:**
  - Design/Build
  - 60% design completed
  - Guaranteed Maximum Price
  - Developed for 60% design

Complex hydraulics required physical model
GLWA Rouge River Outfall Disinfection Project

System Components:

• New Chemical Facility includes:
  – Sodium Hypochlorite System:
    • 3 @ 110,000 gallon tanks
    • 9 chemical pumps
    • 4 chemical diffusers
    • 2 flow meters (ea 18’ x 14.5’)
  – Gaseous Chlorine System
    • 8 chemical diffusers
    • 4 flow meters (ea 15.5’ x 15’)
  – Sodium Bisulfite System
    • 2 @ 35,000 gallon tanks
    • 6 chemical pumps
    • 4 chemical diffusers
    • 2 flow meters (ea 19.3’ x 10.7’)

Required Removal of 11,000 cu yds of solids
From existing underground conduits
GLWA Rouge River Outfall Disinfection Project

Project Status

• Current activities:
  – Completed deep foundation design for building permit application
  – Finalizing remaining 100% design
  – Completing soft dig utility location
  – Performing utility relocation
  – Site demo completed

• Schedule:
  – Completed sediment removal in early 2016
  – Started construction April 1, 2017
  – Chemical building completed Fall 2018
  – Substantial completion April 1, 2019
  – Demonstration testing Spring/Summer 2019
  – Final completion, December 31, 2019

New facility located on constrained site
HUBBELL, ROTH & CLARK
NEWS FROM THE FIELD

MWEA 2017
Annual Conference
Downriver Wastewater Treatment Facility (DWTF) Headworks System Renovations
Downriver Wastewater Treatment Facility (DWTF) Secondary System Renovations
Downriver Wastewater Treatment Facility (DWTF) Laboratory Renovations
Downriver Wastewater Treatment Facility (DWTF) Solids Complex Renovation Project (DR-6)
City of South Haven
WWTP Pump Station Addition
City of Wixom
Solids Handling Improvements
City of Bay City
RTB #3 - Screw Pumps Replacement
News From the Field for MWEA Annual Conference 2017
Nashville Wastewater System Improvements
Nashville, Michigan
Nashville Wastewater System Improvements
Nashville, Michigan
City of Albion 2017 WWTP Improvements
Albion, Michigan
Sturgis Market St. Lift Station: Construction Phase

Sturgis, Michigan
Sturgis Market St. Lift Station: Construction Phase

Sturgis, Michigan
Kinross WWTP Improvements Segment 1

Kinross, Michigan
Kinross WWTP Improvements Segment 1
Kinross, Michigan
Hillsdale BPU – Wastewater System Improvements

Hillsdale, Michigan
Hillsdale BPU – Wastewater System Improvements

Hillsdale, Michigan
Hillsdale BPU – Wastewater System Improvements

Hillsdale, Michigan
Dexter –
Dexter, Michigan
Dowagiac – WWTP

Dowagiac, Michigan
Croswell – Imhoff tanks
Croswell – Sludge Press

Croswell, Michigan
Croswell – Sludge Press
Croswell, Michigan
West Bay County WWTP
West Bay County, Michigan
News From the Field

Prein & Newhof

MWEA
2017 Annual Conference
City of Mason
2017 Wastewater Treatment Plant Improvements – Headworks
City of Mason
Wastewater Treatment Plant Improvements
- Headworks
City of Mason
Wastewater Treatment Plant Improvements – Headworks
Plainfield Charter Township
Northerly Trunk Siphons
Plainfield Charter Township
Northerly Trunk Siphons
Plainfield Charter Township
Northerly Trunk Siphons
City of Roosevelt Park
Roosevelt Road Drainage Improvements and Groundwater Collection System

BEFORE

DURING

AFTER
City of Roosevelt Park
Roosevelt Road Drainage Improvements and Groundwater Collection System

Gravity Groundwater Discharge Pipe
City of Roosevelt Park
Roosevelt Road Drainage Improvements and Groundwater Collection System
Ottawa County Road Commission
Wastewater Collection System Replacement – Chicago Drive M-121 and Rush Creek Trunk Sewer
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Wastewater Collection System Replacement – Chicago Drive M-121 and Rush Creek Trunk Sewer
NEWS FROM THE FIELD

MWEA | 2017 ANNUAL CONFERENCE
Coldwater Phase 1 Improvements

Engineer: FTCH
Construction Manager: FTCH
Investment By CBPU: $3.3 million
Coldwater Phase 1
Coldwater Phase 1
Walled Lake-Novii WWTP
Walled Lake-Novii WWTP
Lakewood Wastewater Authority/Village of Lake Odessa

- Replacement submersible pump station
- Watermain Replacement
  - 4160 feet of 12” WM
  - 3,390 feet of 8” WM
- Sanitary Sewer Replacement
  - 7,925 feet of 8” gravity
Lakewood Wastewater Authority/Village of Lake Odessa

- Replacement submersible pump station
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  - 4160 feet of 12” WM
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N.E. Road & Utility Improvements – Fiske Road Pump Station
Fiske Road Pump Station
Fiske Road Pump Station
2016-2017 Large Construction Jobs

Moore & Bruggink

- Zeeland CWP Expansion
- Delta Charter Township WWTP Upgrades
Zeeland CWP Expansion

January 2016

June 2016

June 2017
Zeeland CWP Expansion
Delta Charter Township WWTP Upgrades

Before

After
Delta Charter Township
WWTP Upgrades

Before

After
Delta Charter Township
WWTP Upgrades

Before

After
2016-2017 Projects

Wyoming: Diffuser Replacement
Niles: RAS Improvements
Coldwater: SCADA Upgrade
Wyoming: Diffuser Replacement
Wyoming: Diffuser Replacement
Wyoming: Diffuser Replacement

$106,020.23
One hundred six thousand, twenty dollars and 23/100
City of Wyoming

Energy Efficiency Upgrades
Niles: RAS Improvements
Niles: RAS Improvements
Coldwater: SCADA Upgrade
Coldwater: SCADA Upgrade
Coldwater: SCADA Upgrade
Milford Wastewater Treatment Plant Improvements

Headworks, Equalization Basin, and Sludge Storage Tank
Headworks Facility

- Construction of new screen grit building to increase grit removal efficiency and reduce grit settling in other areas of the plant
- Construction of a new below-ground pump station that will operate with both the existing plant and the new Equalization Basin
• 300,000 gallon Equalization Basin

• Provide consistent flow rate to plant improving treatment efficiency

• Provides means for diverting flows during low flow periods for inspection & maintenance
Sludge Handling Upgrades

- 400,000 gallon Sludge Storage Tank
- Decreases frequency of sludge hauling and improves operational flexibility
TETRA TECH
NEWS FROM THE FIELD 2017

MWEA 2017 Annual Conference
Tertiary Filter, UV Disinfection, and Effluent Discharge
East Lansing Water Resource Recovery Facility

Engineer: Tetra Tech • 517.316.3940 • www.tetratech.com
Contractor: Grand River Construction

New UV Building Addition
New Tertiary Filter Equipment
Tertiary Filter, UV Disinfection, and Effluent Discharge
East Lansing Water Resource Recovery Facility

New UV Equipment Room

New Outfall Structure
North Secondary Flow Distribution Improvements
Grand Rapids Water Resource Recovery Facility

Engineer: Tetra Tech • 517.316.3940 • www.tetratech.com
Contractor: L.D. Dosca Company
North Secondary Flow Distribution Improvements
Grand Rapids Water Resource Recovery Facility

New Flow Split Structure

Green Wall Feature
THANK YOU

City of Jackson
Benton Harbor St Joseph Authority
City of Grand Rapids
Black & Veatch
Great Lakes Water Authority
Hubble Roth & Clark
Wayne County Downriver WWTP
City of South Haven
City of Wixom
City of Bay City
Calhoun County
Fleis & Vandenbrink
Fife Lake
City of Nashville
City of Sturgis
City of Kinross
City of Hillsdale
Village of Dexter
City of Dowagiac

Bay County
Prein & Newhof
City of Roosevelt Park
Plainfield Township
Ottawa County
Fishbeck Thompson Carr & Huber
City of Coldwater
Walled Lake Novi WWTP
Lakewood Wastewater Authority
Moore & Bruggink
City of Zeeland
Delta Township
Donahue
City of Wyoming
Village of Milford
OHM
City of Niles
Tetra Tech