



Wastewater Operations CIP Presentation

Chris Nastally

*Director – Wastewater
Engineering*





Capital Improvement Plan (CIP) Project Information, Design

- 211007, WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements
- 216001, WRRF Structural Rehabilitation
- 260618, Oakwood HVAC Improvements



CIP Project # 211007

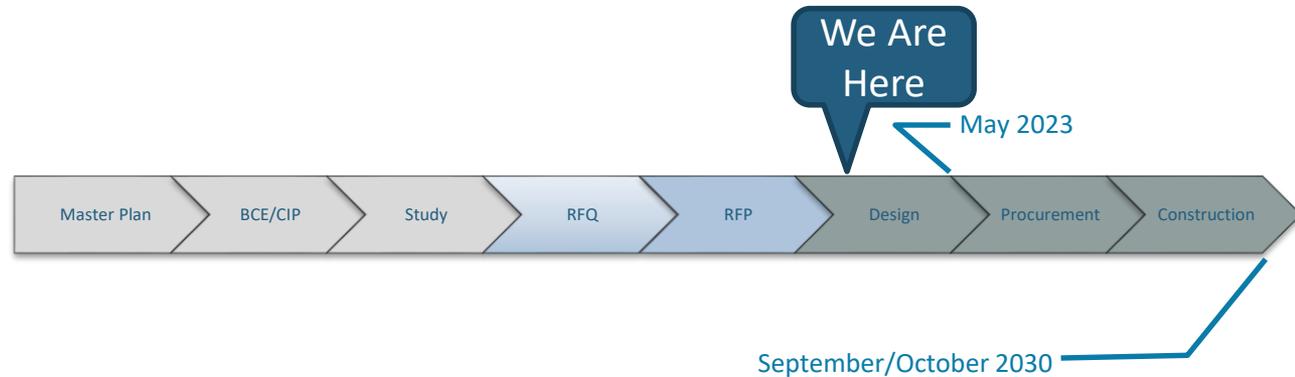
(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)



Project Information

- Type of Project: Design-Bid-Build
- Project Manager: Jason Williams

Project Status:



Project Costs:

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•1904337 (Design)	•Hazen and Sawyer	•\$11,307,128	•\$5,036,021	•45%	•10/7/2020	•3/1/2030	•72% (Design)
•TBD (Construction)	•TBD	•TBD	•\$0	•0%	•TBD	•TBD	•TBD

CIP Project # 211007

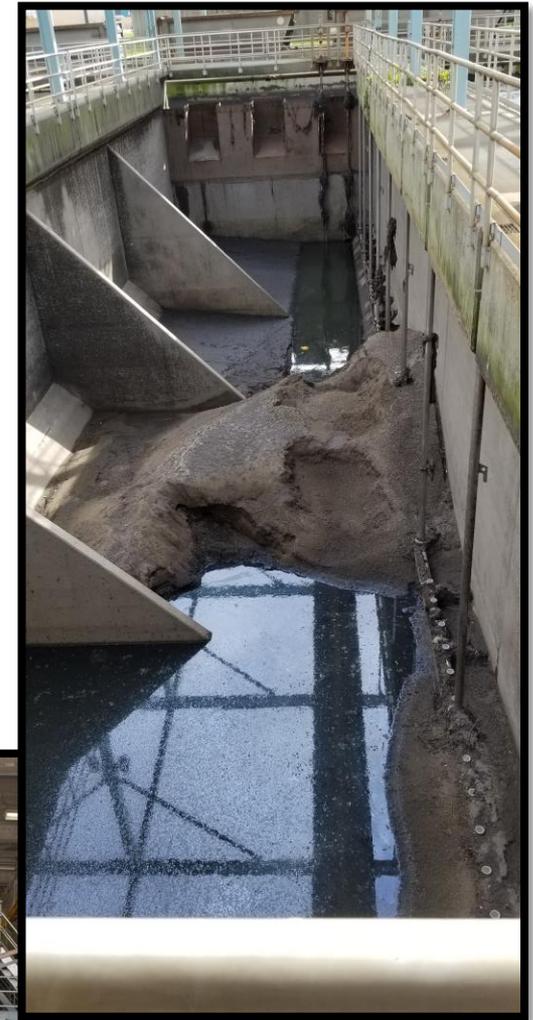
(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)

Project Significance / Need / Background

- Improve Material Removal
- Reduce Batch Operations

Project Overview

- Reduced Bar Screen Size
- Screenings Washing and Volume Reduction
- Two New Screen Bypass Channels
- Improved Grit Capture (replace aerated grit channel with vortex tanks)
- Pumped Grit Conveyance
- Grit Washing
- Improved Process Monitoring

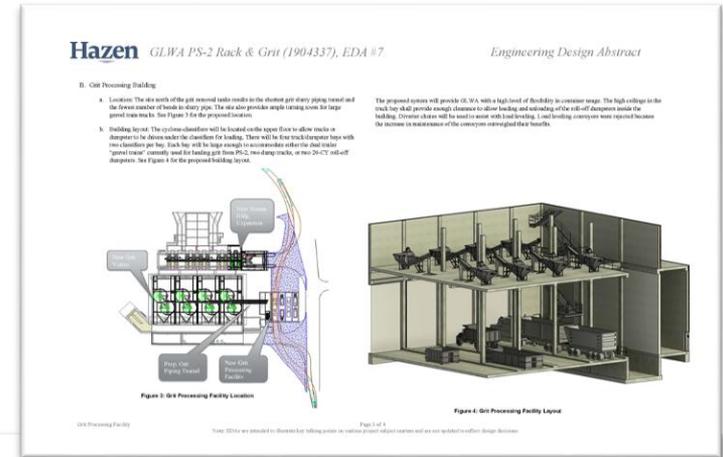


CIP Project # 211007

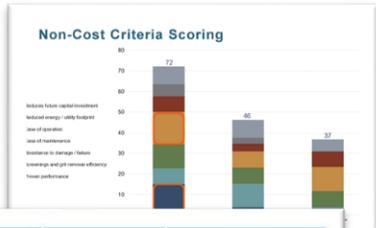
(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)

Project Design Tools

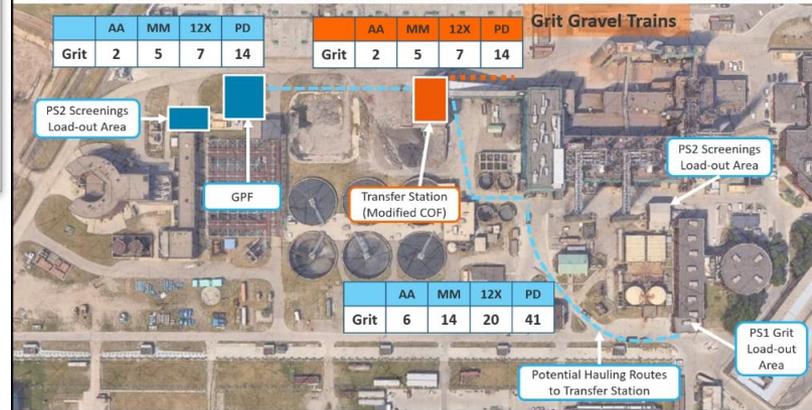
- High Level Discussion Matrix
- Engineering Design Abstracts (EDA)
- Hazen Converge, Non-Cost Criteria
- Reliability Centered Design and Maintenance (RCD/RCM)
- HoloBuilder Platform
- Reimagining Everything



		A1	A2	A3	B	C	D
		Rehab existing grit chambers - Screw Conveyor	Rehab existing grit chambers - Chain & Flight	Rehab existing grit chambers - Subm. Grit Pumps	Retrofit grit chambers with stacked tray grit removal	Retrofit grit chambers with stirred vortex grit removal	Alternative A plus separate dr weather facility
VES	A	53		53	43	49	N/A
	A1	57		57	52	61	
	B	Eliminated due to access and egress limitations					



Equipment	Facility Cost at Ash Lagoon	Equipment Cost	Total Construction Cost ⁽¹⁾
Alt 1 – Cyclone and Classifiers	\$16.6M	\$2.4M	\$19.1M
Alt 3 – Fluidized Bed	\$16.6M	\$4.7M	\$21.3M

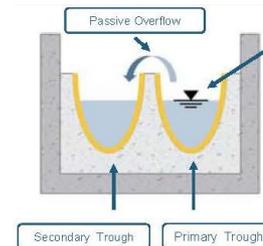
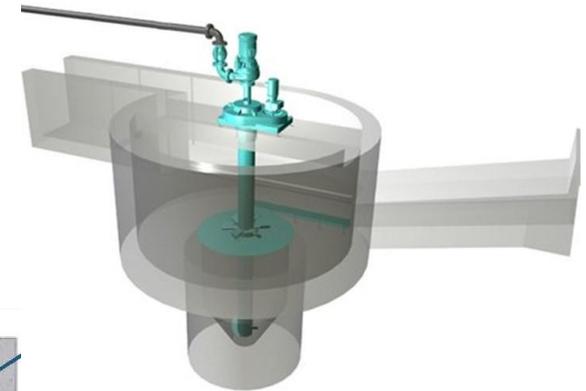
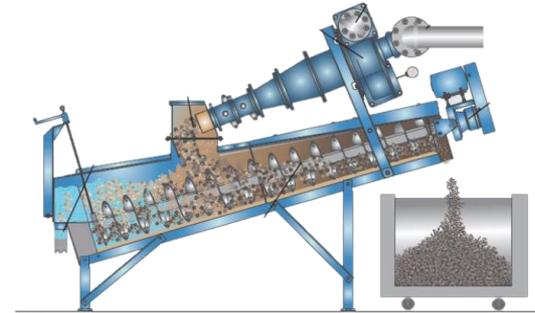


CIP Project # 211007

(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)

Major Proposed Equipment

- 1/4 " Bar Screen
- Sluice (Screening Conveyance)
- Washer/Compactor
- Vortex Tank
- Cyclone-Classifier
- Transfer Station
- HVAC Spin Filters
- Ovation DCS



CIP Project # 216011

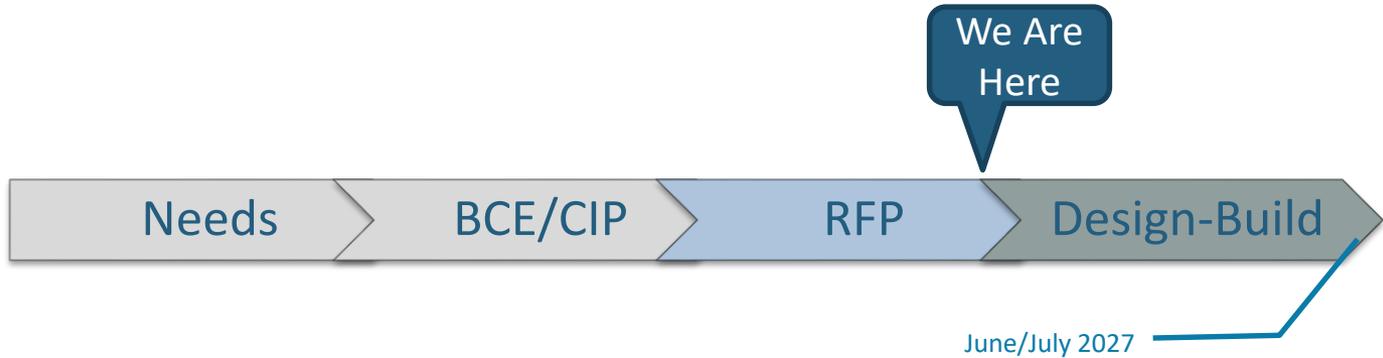
(WRRF Structural Improvements Project)



Project Information

- Type of Project: Design-Build
- Project Manager: Kashmira Patel

Project Status:



Project Costs:

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•2100239 (Design-Build)	•Kokosing Industrial, Inc.	•\$12,639,000.00	•\$0	•0%	•10/1/2022 (anticipated)	•7/1/2027	•0%

Project just approved by Board in August 2022

CIP Project # 216011

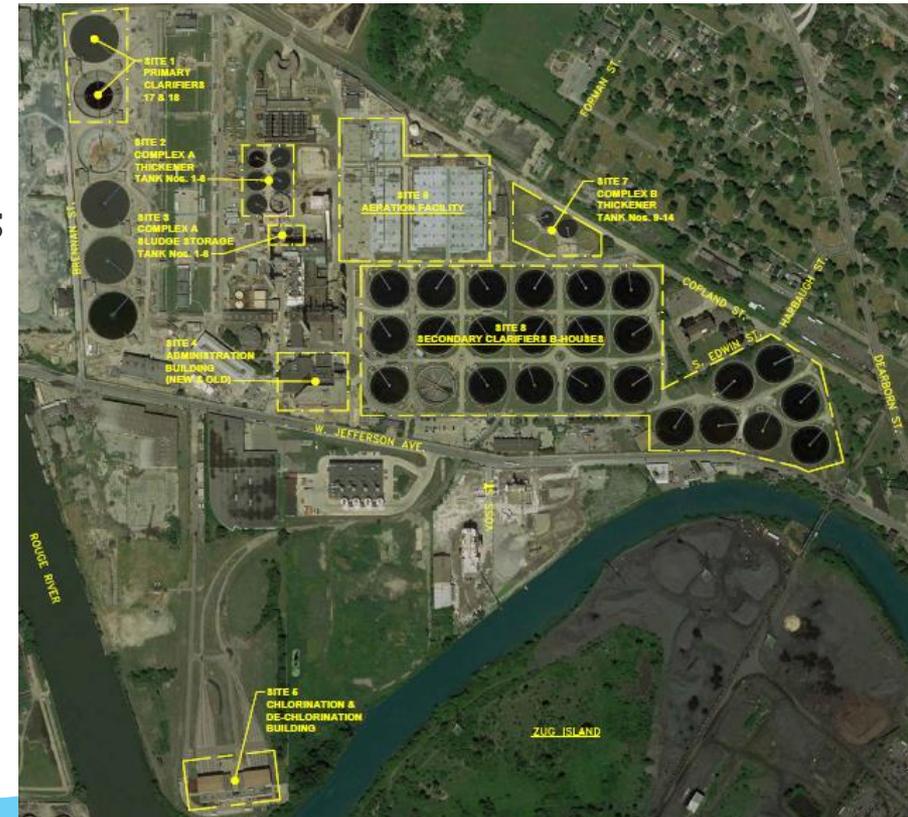
(WRRF Structural Improvements Project)

Project Significance / Need / Background

- Misc. Structural Repairs needed plant-wide
- Necessary maintenance

Project Overview

- Complete Inspection of Various Plant Structures
- Develop repair details/ specifications
- Prioritize repairs
- Perform high-priority repairs



CIP Project # 216011

(WRRF Structural Improvements Project)

Some defect photos from WRRF pre-inspection:

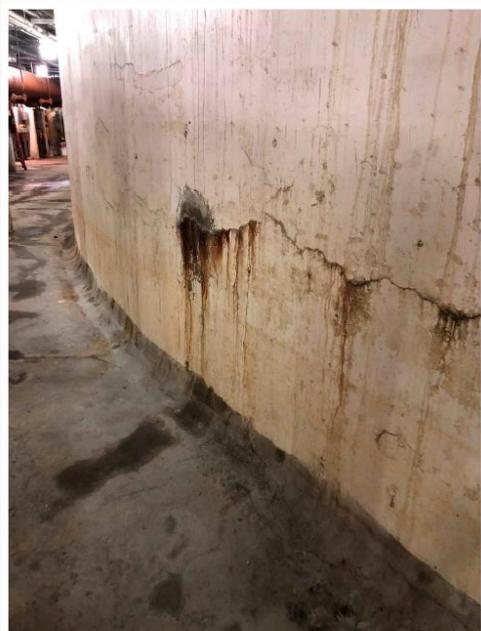


PHOTO 11 – TYPICAL CRACK IN STT TANK WALL IN PIPE GALLERY



PHOTO 7 – STT-1 DEEP CONCRETE SPALL



PHOTO 3 – TYPICAL BROKEN BRICK OLD ADMINISTRATION BUILDING

CIP Project # 260614

(CSO Structural Improvements Project) Sister Project (WRRF PREVIEW!!!)

Repair photos:

Conner Creek



Photo 1: Sidewalk removed on West Elevation.



Photo 3: Portion of sidewalk replaced at north elevation. The concrete was poured on May 9th.

Baby Creek



Photo 1: Spall repair Pullman completed today on the south end of the channel.



Photo 2: The arrow indicates the structural injection on the underside of the beam.

CIP Project # 260614

(CSO Structural Improvements Project) Sister Project

Repair photos:
Hubbell

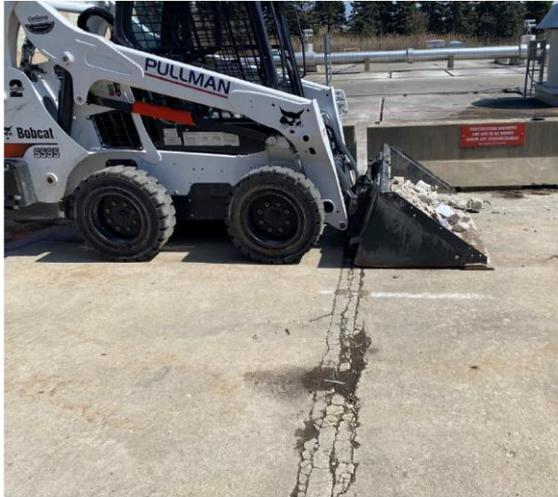


Photo 2: Spalled concrete around control joint west of Headworks Building.



Photo 3: Pullman and Wade Trim looking at deteriorated expansion joint.



Photo 2: Pullman working on top of basin roof.



Photo 4: Pullman distributing concrete into open joints.

CIP Project # 260618

(Oakwood HVAC Improvements Project)



Project Information

- Type of Project: Design-bid-Build
- Project Manager: Vinod Sharma

Project Status:



We Are Here

Project Costs:

September 2023

Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
<ul style="list-style-type: none"> •2001367 (Design) •2100239 (Construction) 	<ul style="list-style-type: none"> •Hazen •Commercial Contracting Company 	<ul style="list-style-type: none"> •\$457,600.00 •\$5,812,000.00 	<ul style="list-style-type: none"> •\$391,111.64 •\$4,328,957.20 	<ul style="list-style-type: none"> •85% •75% 	<ul style="list-style-type: none"> •6/29/2020 •6/21/2021 	<ul style="list-style-type: none"> •9/1/2023 •9/1/2023 	<ul style="list-style-type: none"> •69% •54%

CIP Project # 260618

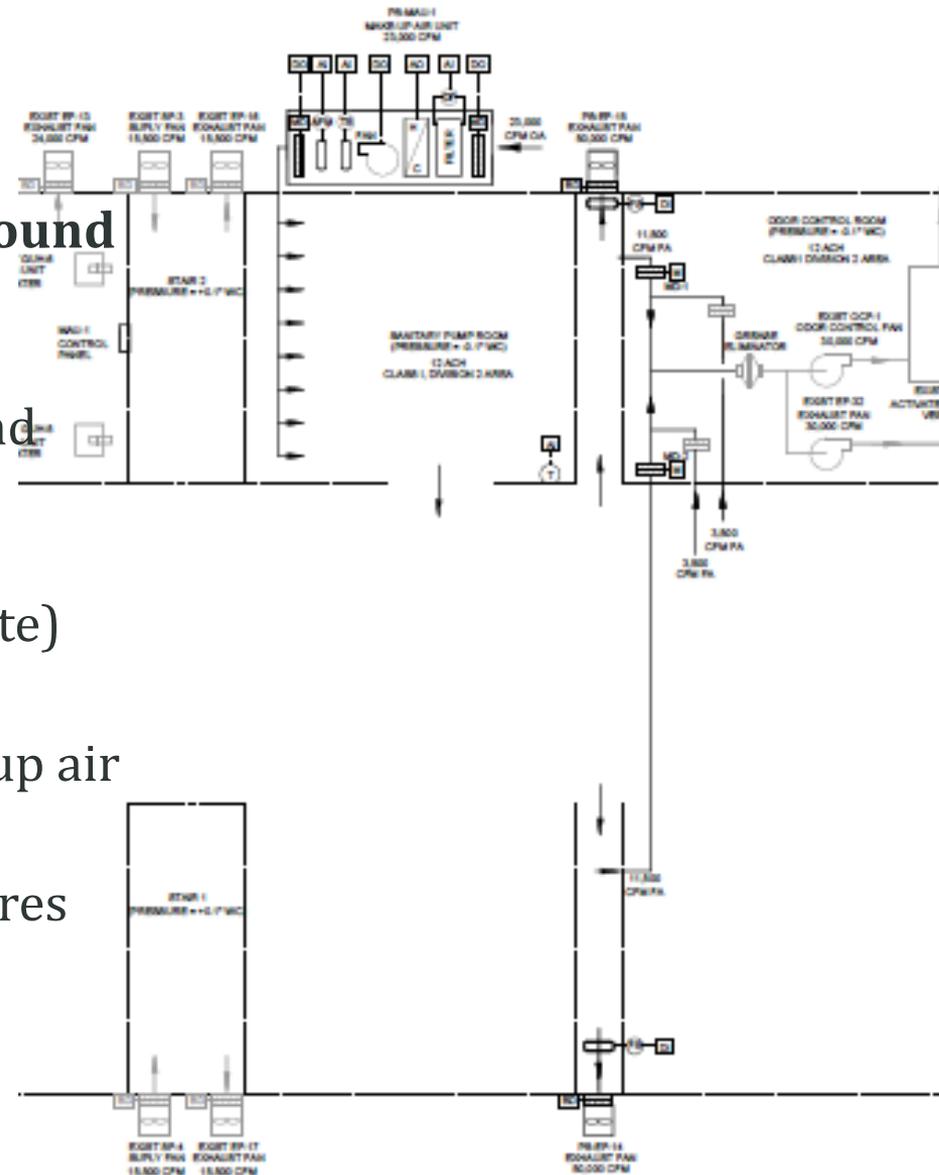
(Oakwood HVAC Improvements Project)

Project Significance / Need / Background

- Restore Supply Fan / Exhaust Fan Operation
- Improve Odor Control ventilation and maintenance

Project Overview

- Replace Influent Supply Fans (relocate)
- Restore effluent exhaust fans
- Replace Sanitary Pump Room Make up air
- Improve air circulation
- Restore sanitary pump room structures
- Modify odor control for proper maintenance & air flow



CIP Project # 260618

(Oakwood HVAC Improvements Project)

Project Photos:



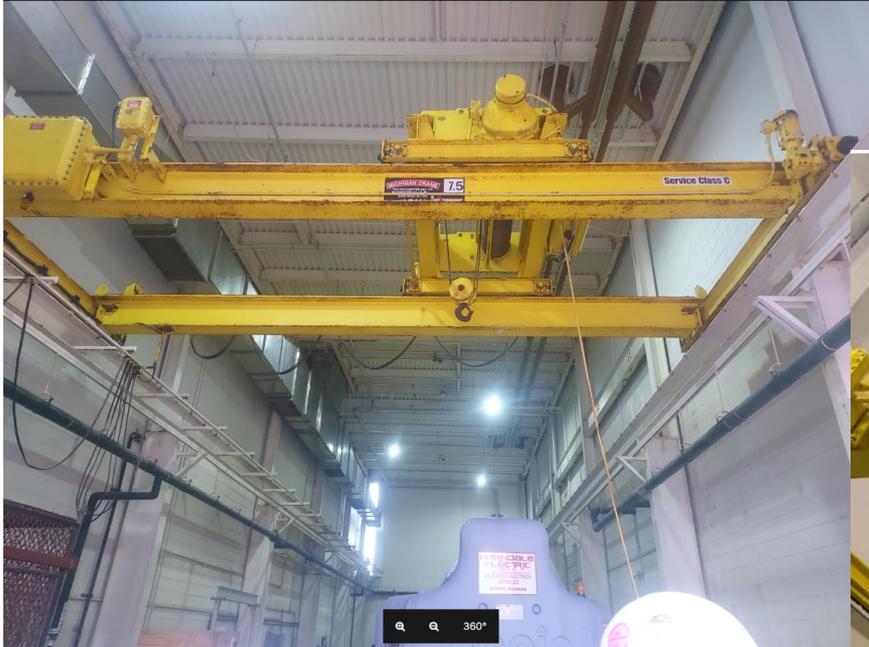
GREAT LAKES WATER AUTHORITY
CONTRACT NO: 2003330
Oakwood CSD Facility & Pump Station - HVAC & Odor Control
Improvements
CONTRACTOR: Commercial Contracting Corporation
DATE: 07-18-2022
DESCRIPTION: Roof Curbs Installation - Odor Control Room



CIP Project # 260618

(Oakwood HVAC Improvements Project)

Project Photos:



GREAT LAKES WATER AUTHORITY
CONTRACT NO: 2003330
Oakwood CSO Facility & Pump Station - HVAC & Odor Control
Improvements
CONTRACTOR: Commercial Contracting Corporation
DATE: 06-17-2022
DESCRIPTION: : Painting of Sanitary Pump Room

CIP Project # 260618

(Oakwood HVAC Improvements Project)

Project Photos:



Supply fan gone!



New fan installed on top of roof, accessible, out of corrosive environment!!



GREAT LAKES WATER AUTHORITY
CONTRACT NO: 2006990
Oakwood ISO Facility & Pump Station - HVAC & Odor Control Improvements
CONTRACTOR: Commercial Contracting Corporation
DATE: 07-11-2023
DESCRIPTION: Supply Fan 1 & 2 Installation

Questions and Contact



Chris Nastally, P.E.

Great Lakes Water Authority
Director – Wastewater Engineering

P: 313-319-3934

E: Christopher.Nastally@glwater.org



THANK YOU



GLWA

Great Lakes Water Authority