



# 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

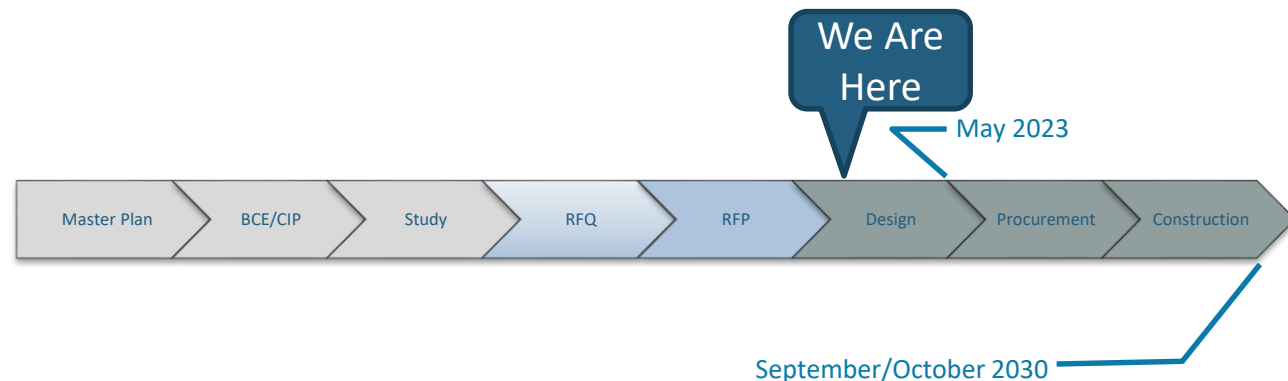
(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)



## ❑ 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

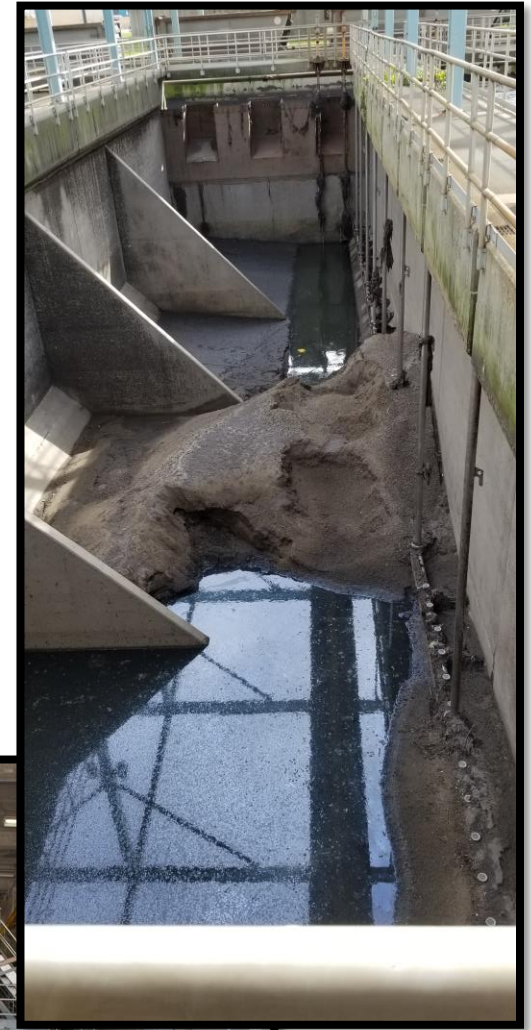
(WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)

## 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

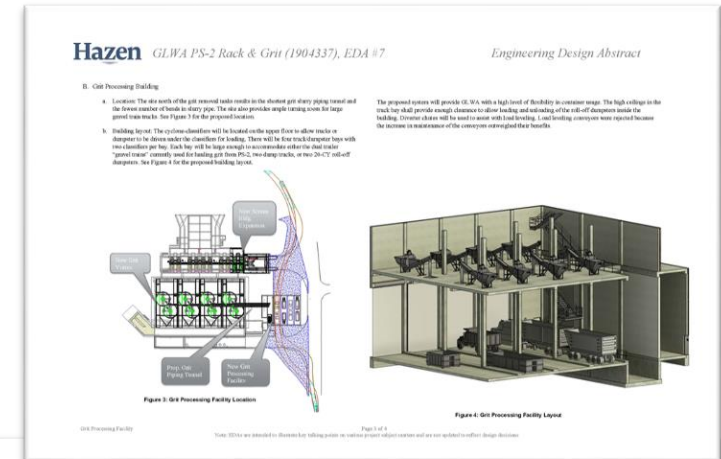


# CIP Project # 211007

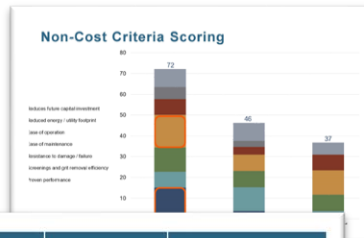
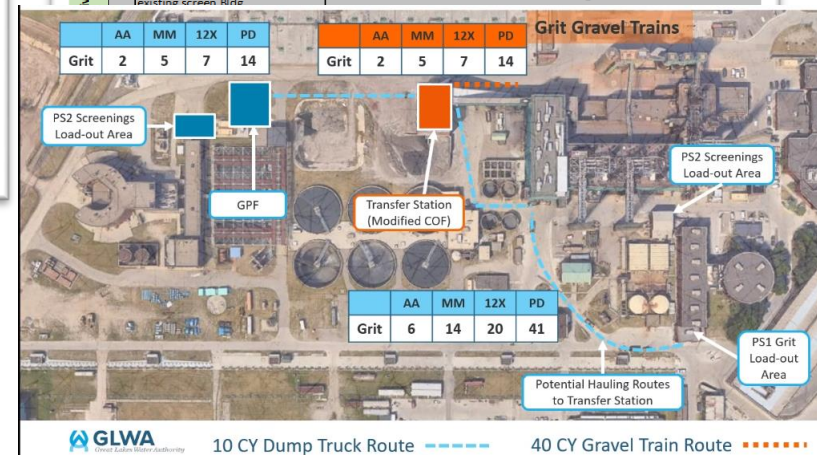
## (WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements)

### 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 Rehab existing grit chambers - Screw Conveyor	A2 Rehab existing grit chambers - Chain & Flight	A3 Rehab existing grit chambers - Subm. Grit Pumps	B Retrofit grit chambers with stacked tray grit removal	C Retrofit grit chambers with stirred vortex grit removal	D Alternative A plus separate dr weather facility
YES	A	1 stage of smaller opening screens in existing channels	53		53	43	49	N/A
	A1	1 stage of smaller opening screens in existing channels with extra channels/screens	57		57	52	61	
	B	Coarse and fine screening in	Eliminated due to access and egress limitations					



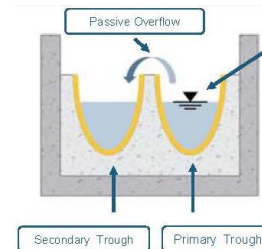
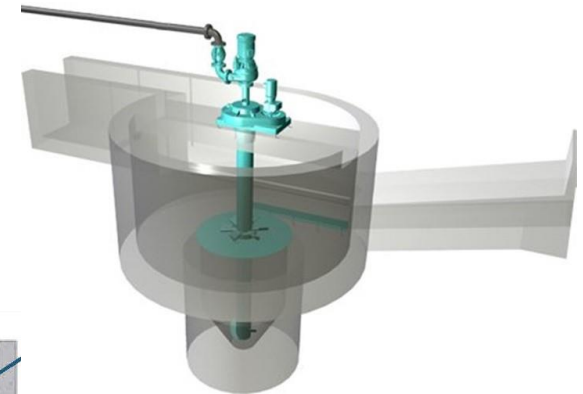
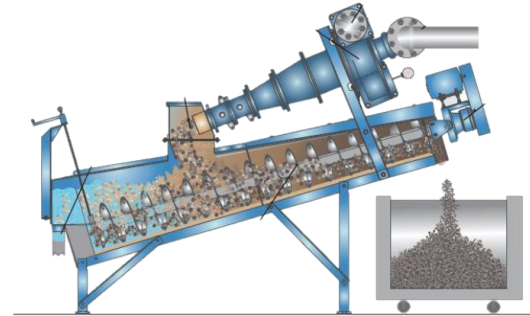
Equipment	Facility Cost at Ash Lagoon	Equipment Cost	Total Construction Cost <sup>(1)</sup>
Alt 1 – Cyclone and Classifiers	\$16.6M	\$2.4M	\$19.1M
Alt 3 – Fluidized Bed	\$16.6M	\$4.7M	\$21.3M

# 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:

June/July 2027

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

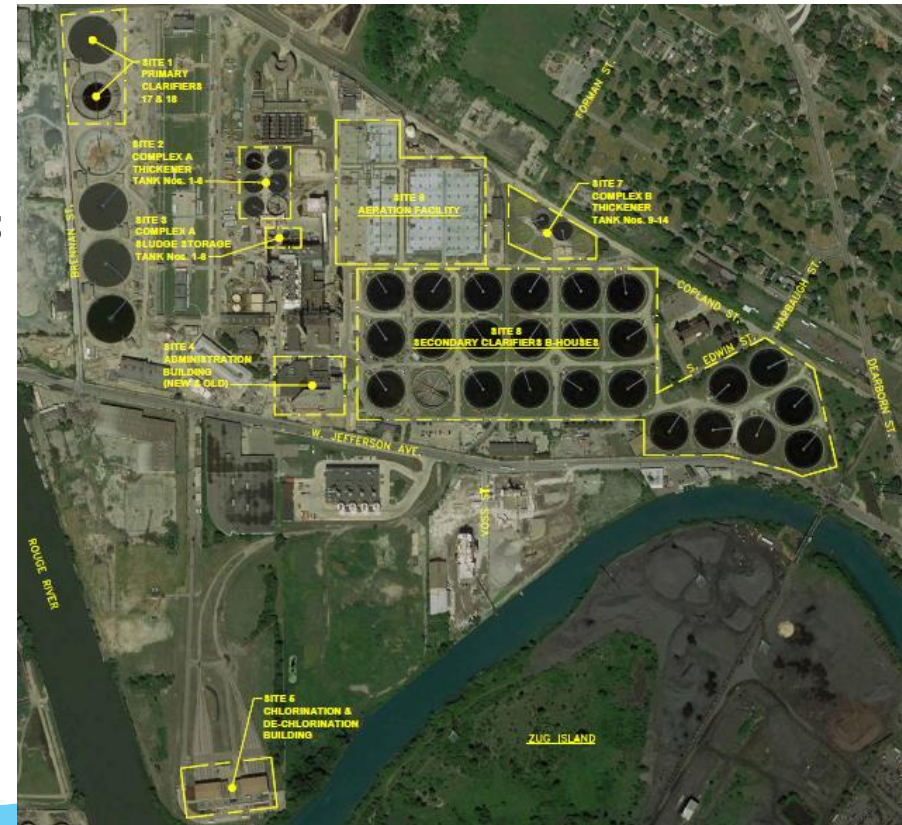
(WRRF Structural Improvements Project)

## 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:

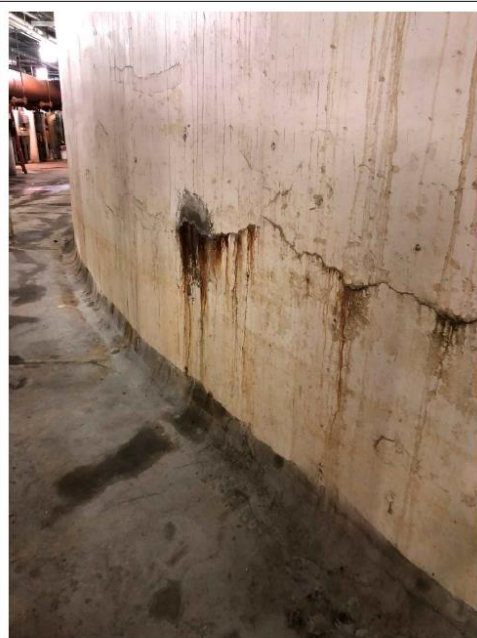


PHOTO 11 — TYPICAL CRACK IN STT TANK WALL IN PIPE GALLERY

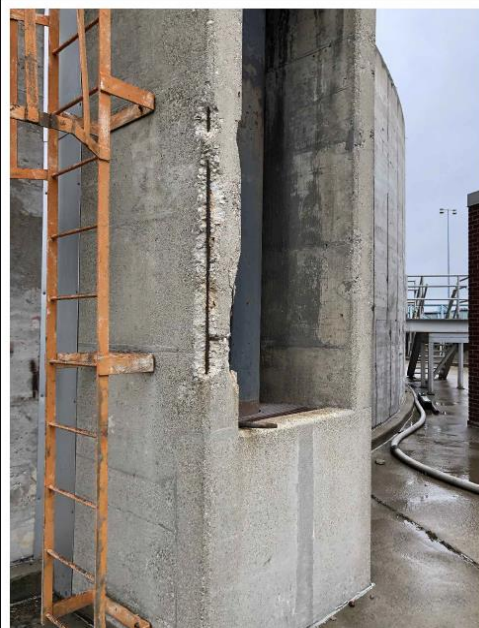


PHOTO 7 — STT-1 DEEP CONCRETE SPALL



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.

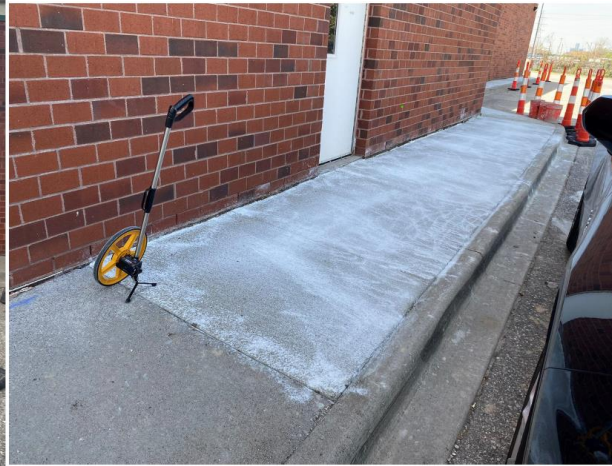


Photo 3: Portion of sidewalk replaced at north elevation. The concrete was poured on May 9<sup>th</sup>.

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

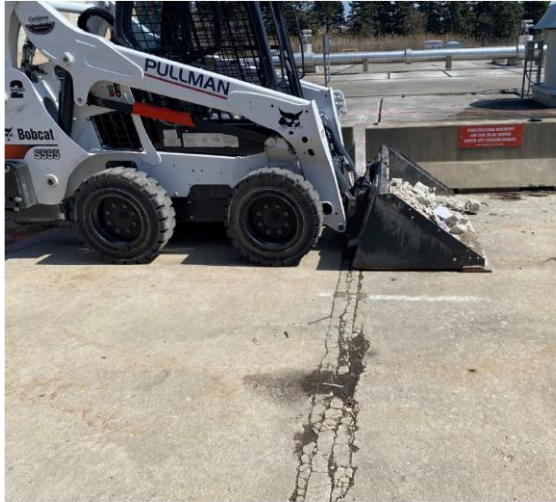


Photo 2: Spalled concrete around control joint west of Headworks Building.



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



Photo 2: Pullman working on top of basin roof.

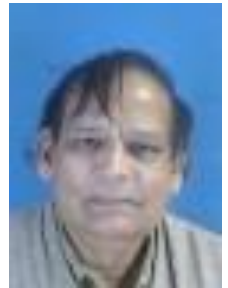


Photo 4: Pullman distributing concrete into open joints.



# CIP Project # 260618

(Oakwood HVAC Improvements Project)



## ❑ Project Information

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

## • Project Status:



## • Project Costs:

September 2023

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

# CIP Project # 260618

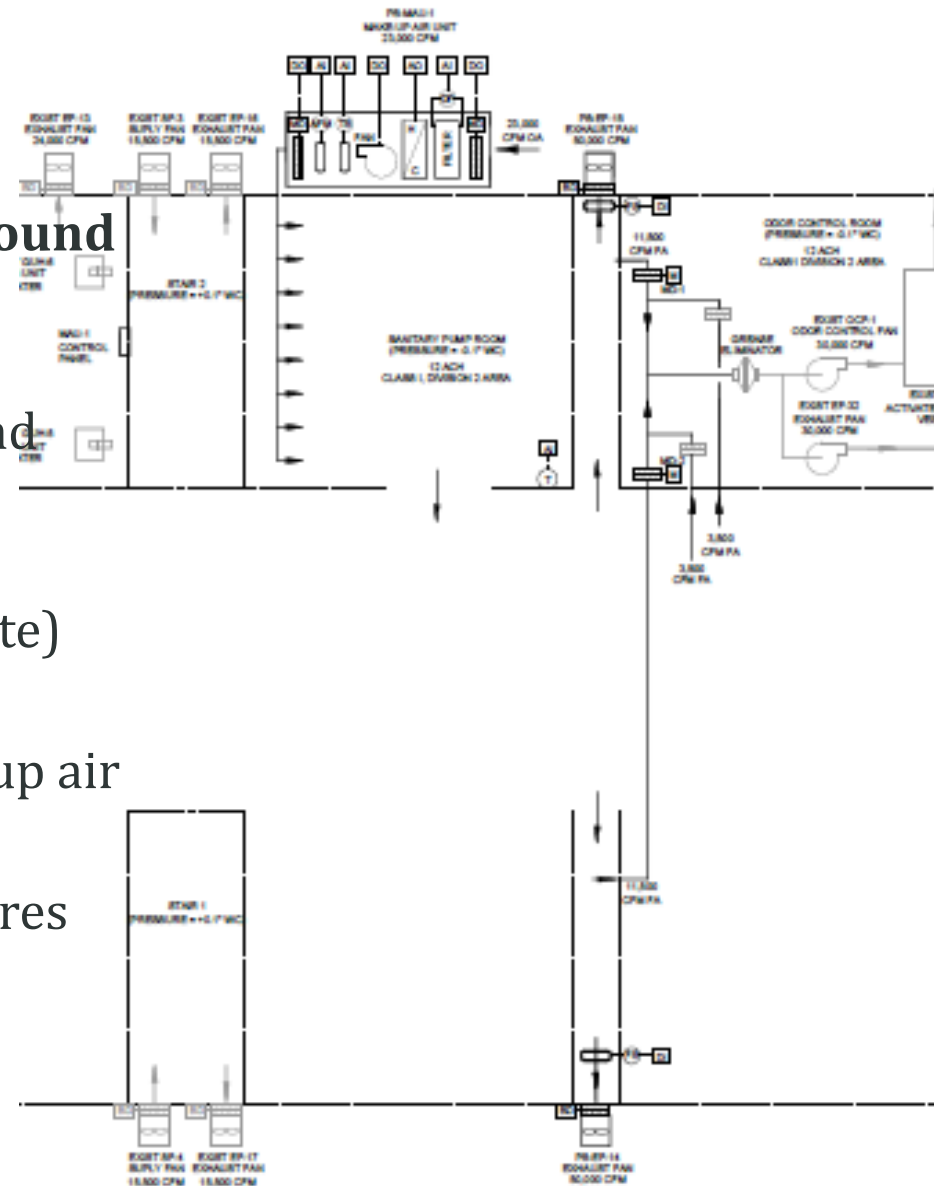
(Oakwood HVAC Improvements Project)

## 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:

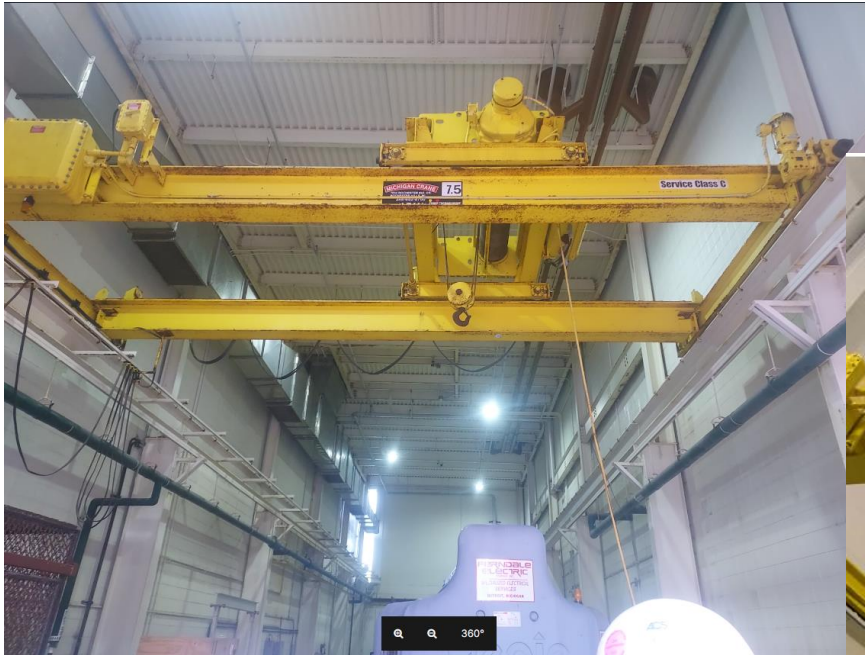




# CIP Project # 260618

(Oakwood HVAC Improvements Project)

## Project Photos:



# 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. 2006390  
Oakwood CSD Facility & Pump Station - HVAC & Odor Control  
Improvements  
CONTRACTOR: Commercial Contracting Corporation  
DATE: 07-11-2022  
DESCRIPTION: Supply Fan 1 & 2 Installation

# Questions and Contact



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# THANK YOU



# GLWA

*Great Lakes Water Authority*