

The Future of Wastewater Treatment in Louisville – Part 1

Presenters: Robin Burch , Brian Bingham, and Alex Novak,
Louisville MSD

08.16.2017



Have you considered.....

What will your treatment plant look like in 20 years?

- Average WWTP age is 30 years – ky.gov

Will you be around to see a major plant expansion?

- Average WWTP Operator is 45-50 years old
- datausa

Strategic Business Plan



*Strategic
Business Plan*

2014-18

Strategic Business Plan



- Improve Customer Service
- Invest in Technology, Infrastructure and Employees
- Improve Quality of Life in Service Area
- Maintain Financial Viability of the Utility

Strategic Business Plan

20-Year Comprehensive Facility Plan – Critical Repair and Reinvestment Plan

Evaluate all service areas of Louisville MSD

- Rehabilitation, renewal, replacement, upgrade and expansion

Make recommendations and prioritize projects

20-Yr Comprehensive Plan

All projects were prioritized to achieve the following objectives:

- Protect the public health and safety
- Protect aquatic and terrestrial environment
- Meet customer expectations for a consistent level of service
- Comply with all law, regulations, orders and standards

But why is this so important now?

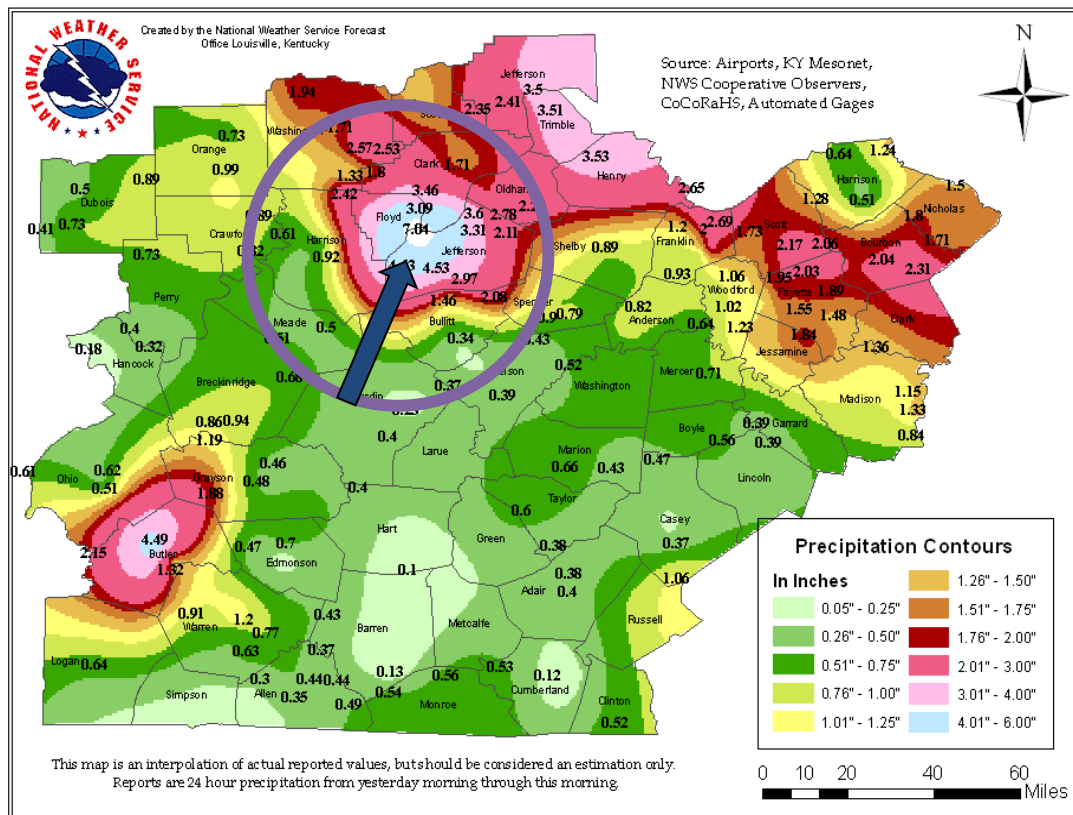
1. Consent Decree – Signed order in 2009



\$850 Million in sewer overflow projects to be completed by 2024

But why is this so important now?

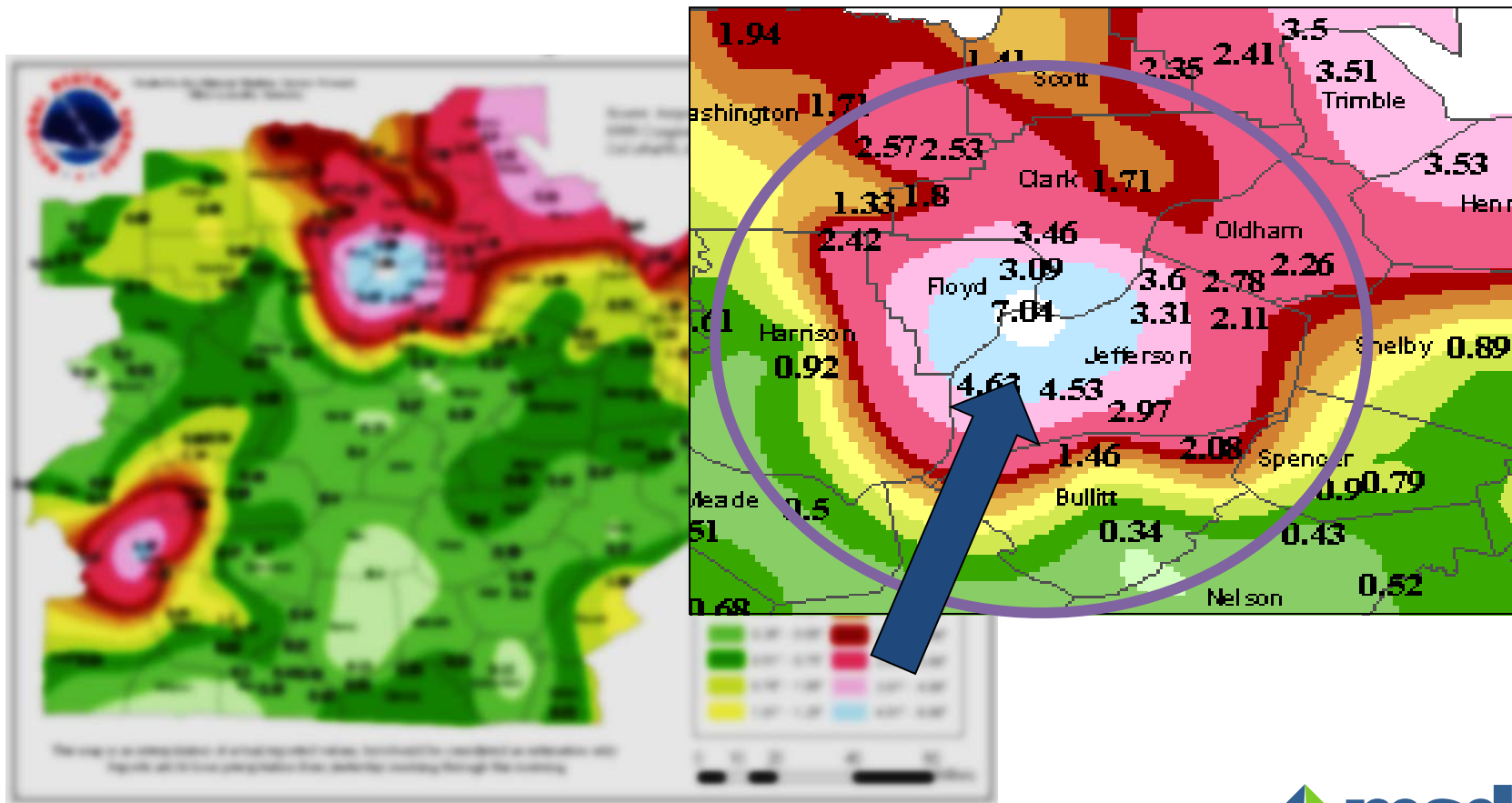
2. Climate Change – Fact or Fiction?



August 4, 2009

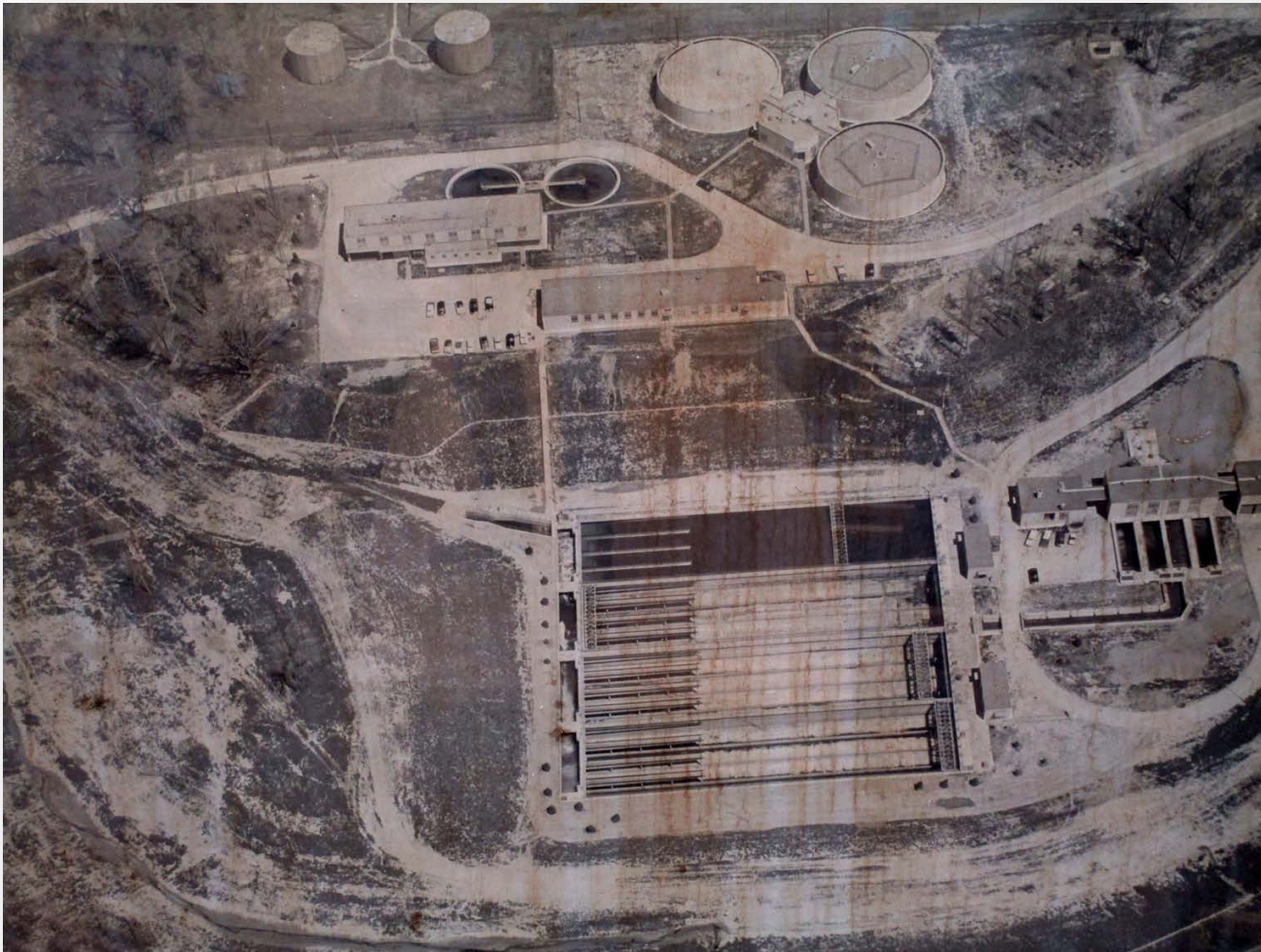
But why is this so important now?

2. Climate Change – Fact



But why is this so important now?

3. Aging Infrastructure – 30 years average age



Preliminary/Primary
Built in 1958

Aging Infrastructure



20-Yr Capital Improvement Plan

Service Area and Program	Capital Cost (in escalated dollars, millions)				Total FY17 through FY36
	FY17 through FY21	FY22 through FY26	FY27 through FY31	FY32 through FY36	
Wastewater	\$848.0	\$392.3	\$353.7	\$262.6	\$1,856.5
Consent Decree (IOAP)	\$546.4	\$ 26.5	\$ 0.4	\$ 0.0	\$ 591.5
NMC	\$116.2	\$ 33.2	\$ 35.1	\$ 40.0	\$ 224.5
CMOM	\$144.2	\$275.7	\$184.4	\$201.1	\$ 805.4
Development	\$ 23.0	\$ 56.9	\$133.8	\$ 21.5	\$ 235.2
Stormwater	\$348.8	\$623.7	\$636.2	\$734.7	\$2,343.4
Drainage	\$189.8	\$403.0	\$394.0	\$529.7	\$1,516.5
Floodplain Management	\$ 19.8	\$ 25.4	29.4	\$ 34.1	\$ 108.6
Ohio River Flood Protection	\$128.1	\$175.6	\$191.2	\$145.9	\$ 640.9
Stormwater Quality (MS4)	\$ 11.2	\$ 19.8	\$ 21.5	\$ 25.0	\$ 77.5
Support Systems	\$ 43.5	\$ 28.7	\$ 24.9	\$ 27.4	\$ 124.5
Capital Equipment	\$ 11.3	\$ 14.7	\$ 16.7	\$ 19.0	\$ 61.8
Facilities	\$ 27.7	\$ 8.3	\$ 3.2	\$ 2.7	\$ 14.9
IT	\$ 3.1	\$ 3.8	\$ 3.1	\$ 3.6	\$ 13.6
LOGIC	\$ 1.4	\$ 1.9	\$ 1.8	\$ 2.1	\$ 7.3
Total Escalated Costs	\$1,240.4	\$1,044.7	\$1,014.7	\$1,024.7	\$4,324.5

20-Yr Capital Improvement Plan

Service Area and Program	Capital Cost (in escalated dollars, millions)				Total FY17 through FY36
	FY17 through FY21	FY22 through FY26	FY27 through FY31	FY32 through FY36	
Wastewater	\$848.0	\$392.3	\$353.7	\$262.6	\$1,856.5
Consent Decree (IOAP)	\$546.4	\$ 26.5	\$ 0.4	\$ 0.0	\$ 591.5
NMC	\$116.2	\$ 33.2	\$ 35.1	\$ 40.0	\$ 224.5
CMOM	\$144.2	\$275.7	\$184.4	\$201.1	\$ 805.4
Development	\$ 23.0	\$ 56.9	\$133.8	\$ 21.5	\$ 235.2
Stormwater	\$348.8	\$623.7	\$636.2	\$734.7	\$2,343.4
Drainage	\$189.8	\$403.0	\$394.0	\$529.7	\$1,516.5
Floodplain Management	\$ 19.8	\$ 25.4	29.4	\$ 34.1	\$ 108.6
Ohio River Flood Protection	\$128.1	\$175.6	\$191.2	\$145.9	\$ 640.9
Stormwater Quality (MS4)	\$ 11.2	\$ 19.8	\$ 21.5	\$ 25.0	\$ 77.5
Support Systems	\$ 43.5	\$ 28.7	\$ 24.9	\$ 27.4	\$ 124.5
Capital Equipment	\$ 11.3	\$ 14.7	\$ 16.7	\$ 19.0	\$ 61.8
Facilities	\$ 27.7	\$ 8.3	\$ 3.2	\$ 2.7	\$ 14.9
IT	\$ 3.1	\$ 3.8	\$ 3.1	\$ 3.6	\$ 13.6
LOGIC	\$ 1.4	\$ 1.9	\$ 1.8	\$ 2.1	
Total Escalated Costs	\$1,240.4	\$1,044.7	\$1,014.7	\$1,024.7	\$4.3 Billion

20-Yr Capital Improvement Plan- Morris Forman

Service Area and Program	Capital Cost (in escalated dollars, millions)				Total FY17 through FY36
	FY17 through FY21	FY22 through FY26	FY27 through FY31	FY32 through FY36	
Wastewater	\$848.0	\$392.3	\$353.7	\$262.6	\$1,856.5
Consent Decree (IOAP)	\$546.4	\$ 26.5	\$ 0.4	\$ 0.0	\$ 591.5
NMC	\$116.2	\$ 33.2	\$ 35.1	\$ 40.0	\$ 224.5
CMOM	\$144.2	\$275.7	\$184.4	\$201.1	\$ 805.4
Development	\$ 23.0	\$ 56.9	\$133.8	\$ 21.5	\$ 235.2
Stormwater	\$348.8	\$623.7	\$636.2	\$734.7	\$2,343.4
Drainage	\$189.8	\$403.0	\$394.0	\$529.7	\$1,516.5
Floodplain Management	\$ 19.8	\$ 25.4	29.4	\$ 34.1	\$ 108.6
Ohio River Flood Protection	\$128.1	\$175.6	\$191.2	\$145.9	\$ 640.9
Stormwater Quality (MS4)	\$ 11.2	\$ 19.8	\$ 21.5	\$ 25.0	\$ 77.5
Support Systems	\$ 43.5	\$ 28.7	\$ 24.9	\$ 27.4	\$ 124.5
Capital Equipment	\$ 11.3	\$ 14.7	\$ 16.7	\$ 19.0	\$ 61.8
Facilities	\$ 27.7	\$ 8.3	\$ 3.2	\$ 2.7	\$ 14.9
IT	\$ 3.1	\$ 3.8	\$ 3.1	\$ 3.6	\$ 13.6
LOGIC	\$ 1.4	\$ 1.9	\$ 1.8	\$ 2.1	\$ 7.3
Total Escalated Costs	\$1,240.4	\$1,044.7	\$1,014.7	\$1,024.7	\$4,324.5

Morris Forman 20-Yr Projects

From the recommended \$1.8 Billion in
Wastewater Projects

- 30 projects specifically to MFWQTC
- Totaling over \$160 Million
- Timeframe 2017 - 2036

Current 20-Yr Projects



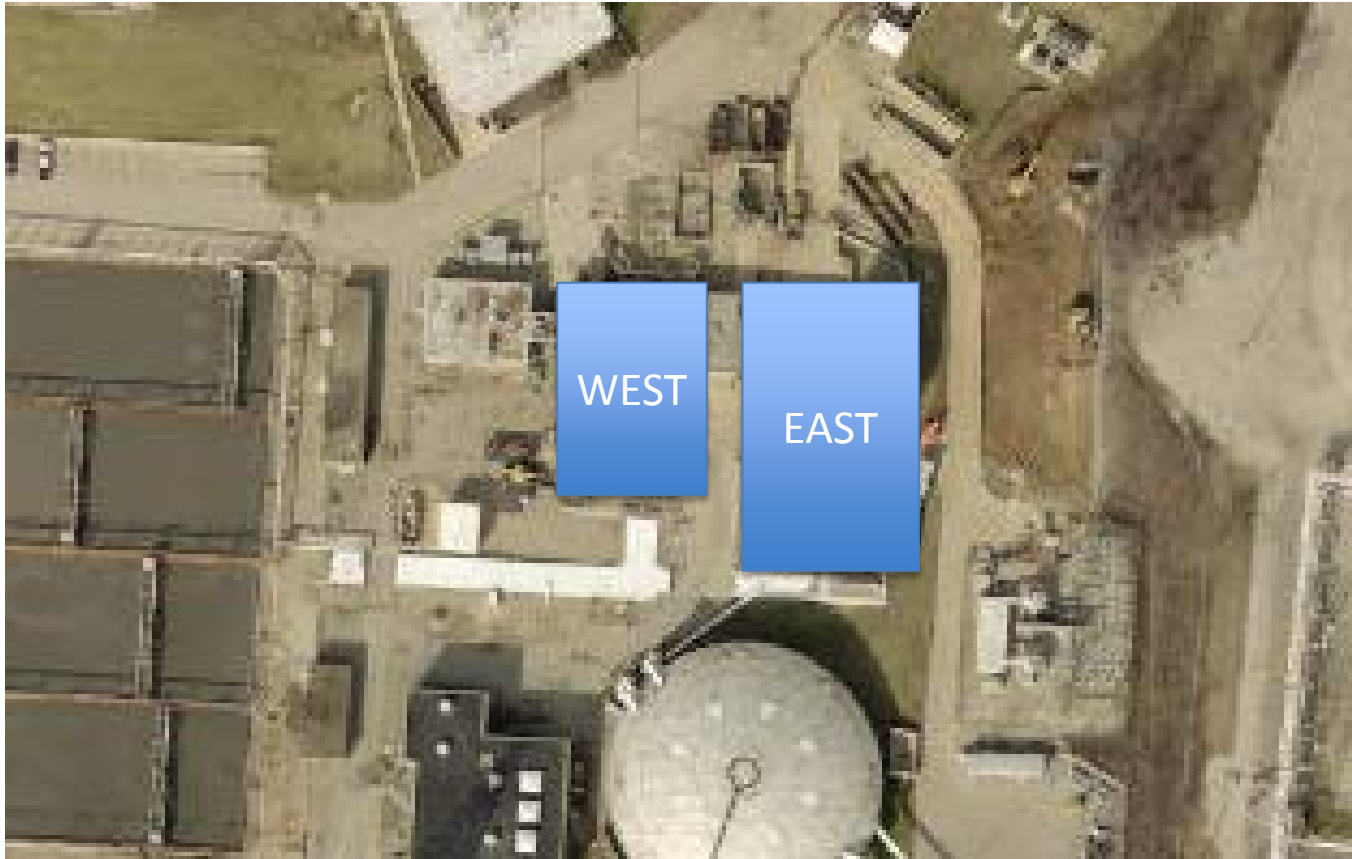
Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement

Notice to Proceed: July 31, 2015

Final Completion Estimated: October 27, 2017

Project Cost: \$12.0 M

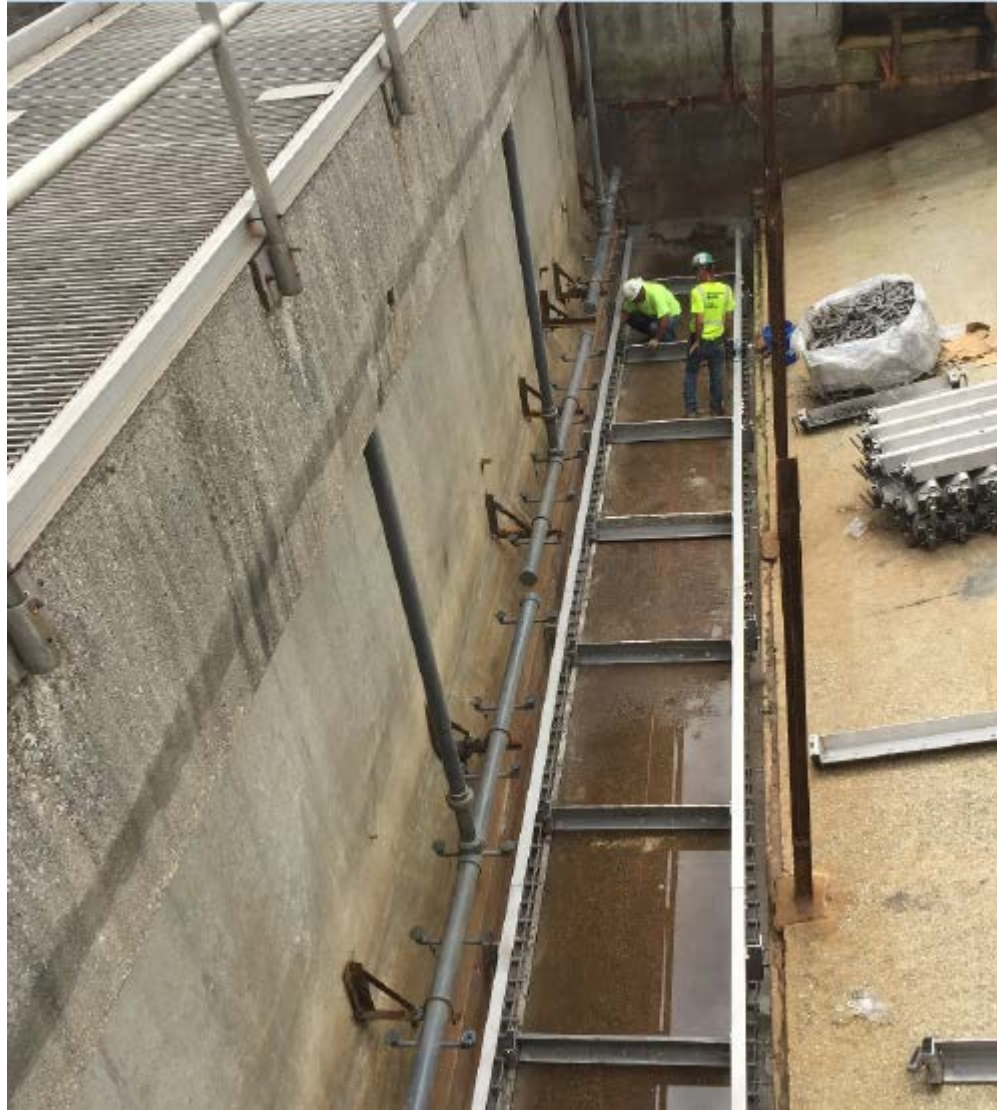
Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



Headworks Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



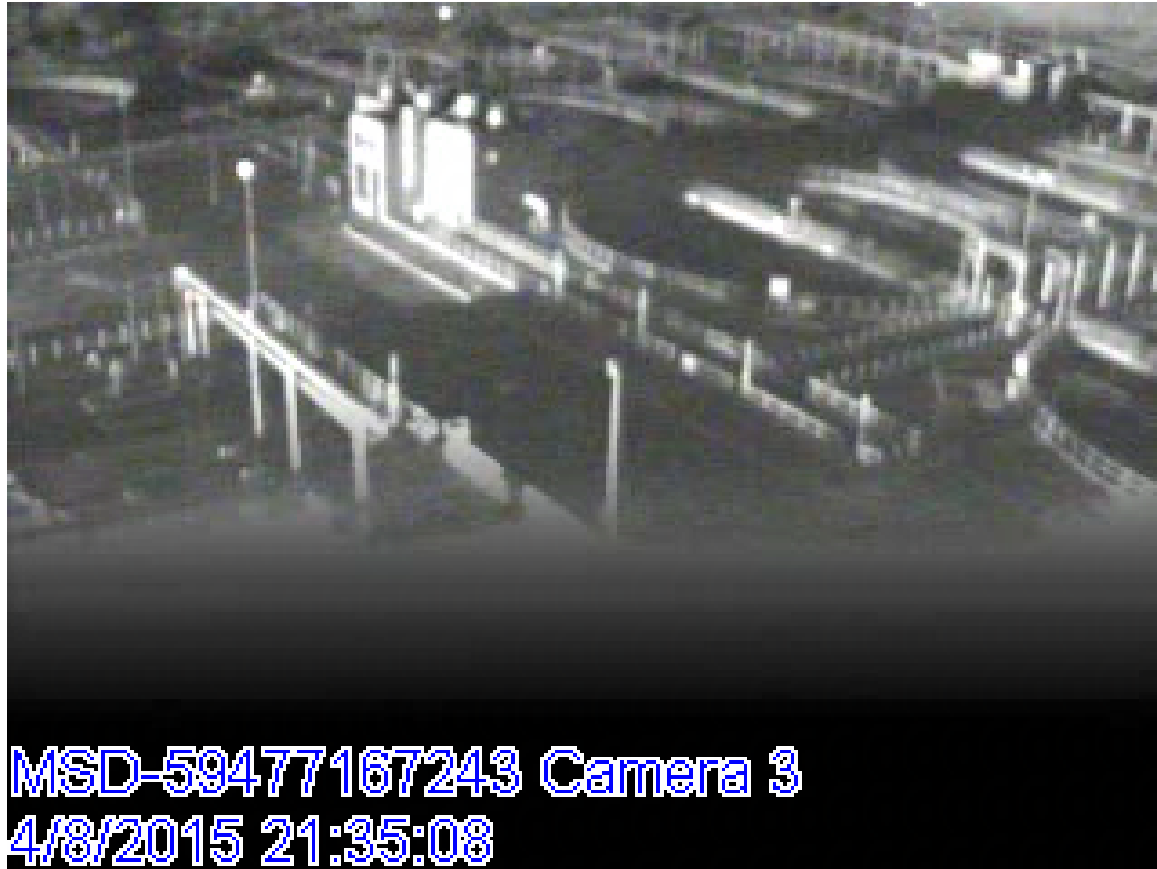
High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement

Notice to Proceed: November 9, 2015

Final Completion: September 13, 2017

Project Cost: \$6.0 M

High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



High Yard (Electrical Substation) Replacement



Oxygen Plant Replacement



Oxygen Plant Replacement



Oxygen Plant Replacement



Oxygen Plant Replacement



Oxygen Plant Replacement



Oxygen Plant Replacement



20 Years and Beyond

- Current Capital Projects near completion
- Biosolids Replacement Project just starting
- Preventative Maintenance is key
- New permit requirements

But what is next.....

20 Years and Beyond



20 Years and Beyond



Thank You

Questions