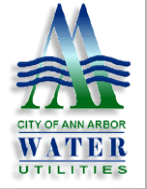


Facilities Renovations Project



City of Ann Arbor WWTP



Agenda

- Introductions
- WWTP Overview
- Site Conditions
- Facility Master Plan
- Facilities Renovations Project
- Project Schedule and Funding



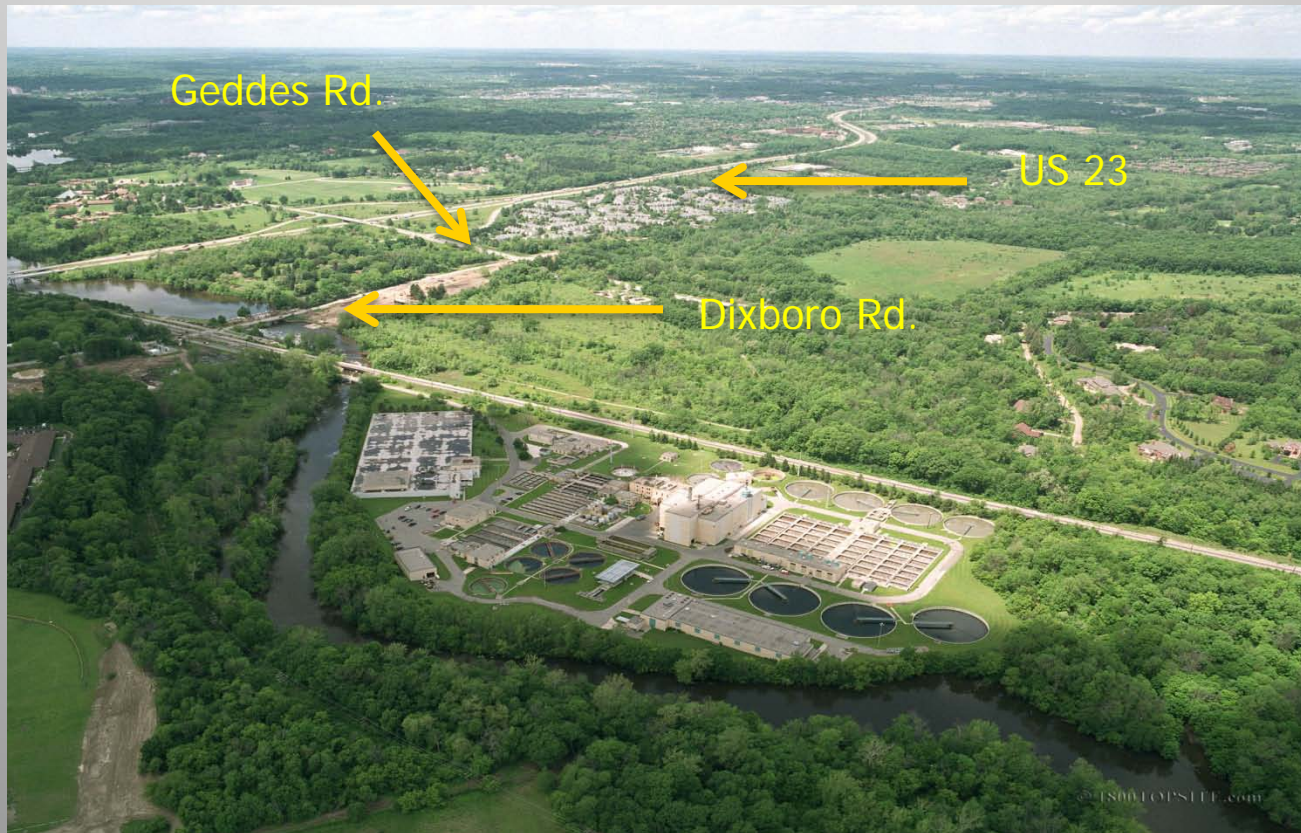
Project Team

- Wastewater Treatment Services
 - Earl J. Kenzie, P.E., Manager
 - Mike Amicangelo, P.E., Project Engineer
- Malcolm Pirnie of Michigan, Inc.
 - Tom Porter, Project Manager
 - Chris Englert, P.E., Project Engineer

City of Ann Arbor WWTP



City of Ann Arbor WWTP



Located in Ann Arbor Township



City of Ann Arbor WWTP

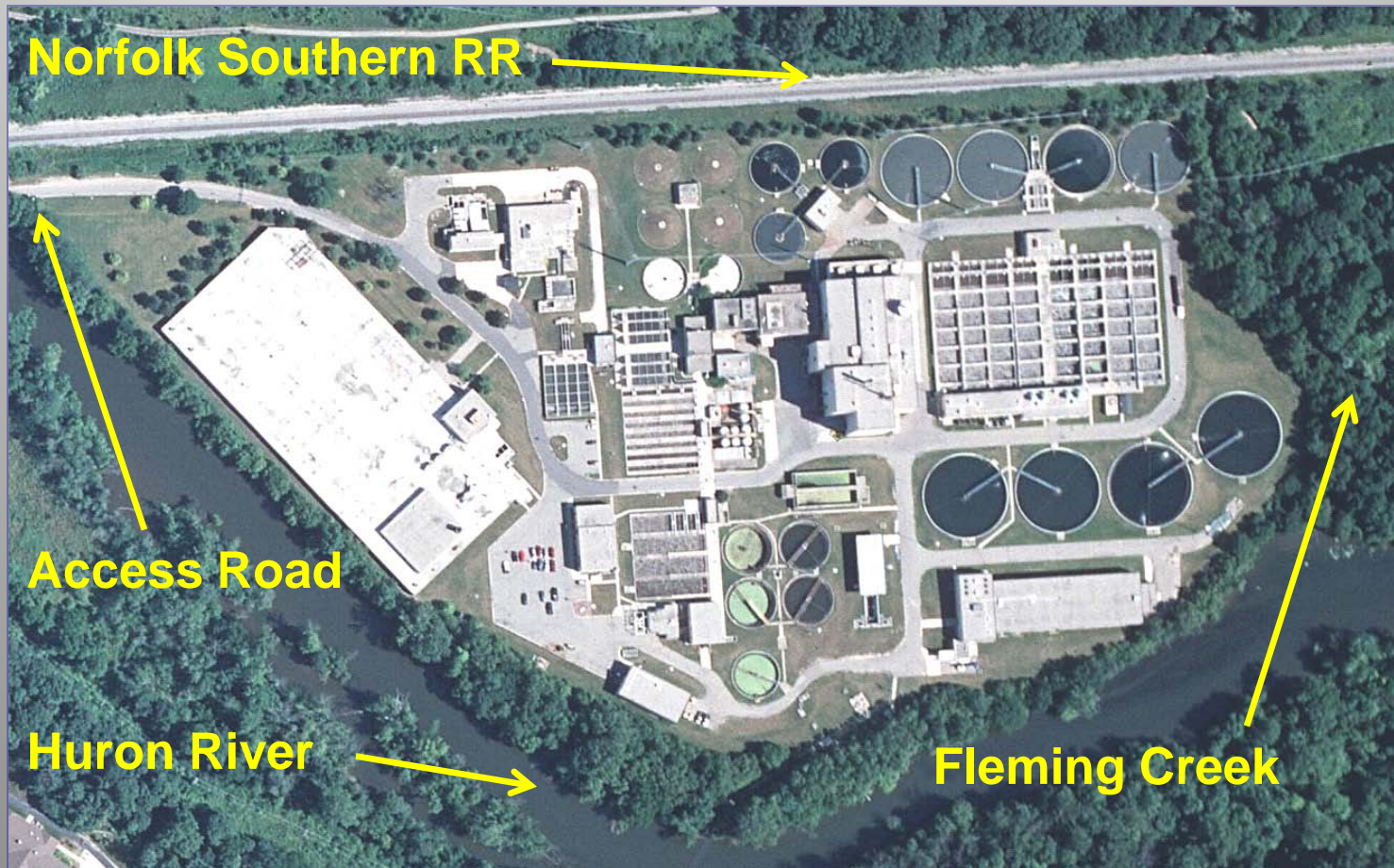
- Services City of Ann Arbor and portions of Ann Arbor, Pittsfield and Scio Townships
- Services approximately 130,000 people
- Staffed 24/7 by certified, trained operators
- Operations regulated by State and Federal agencies



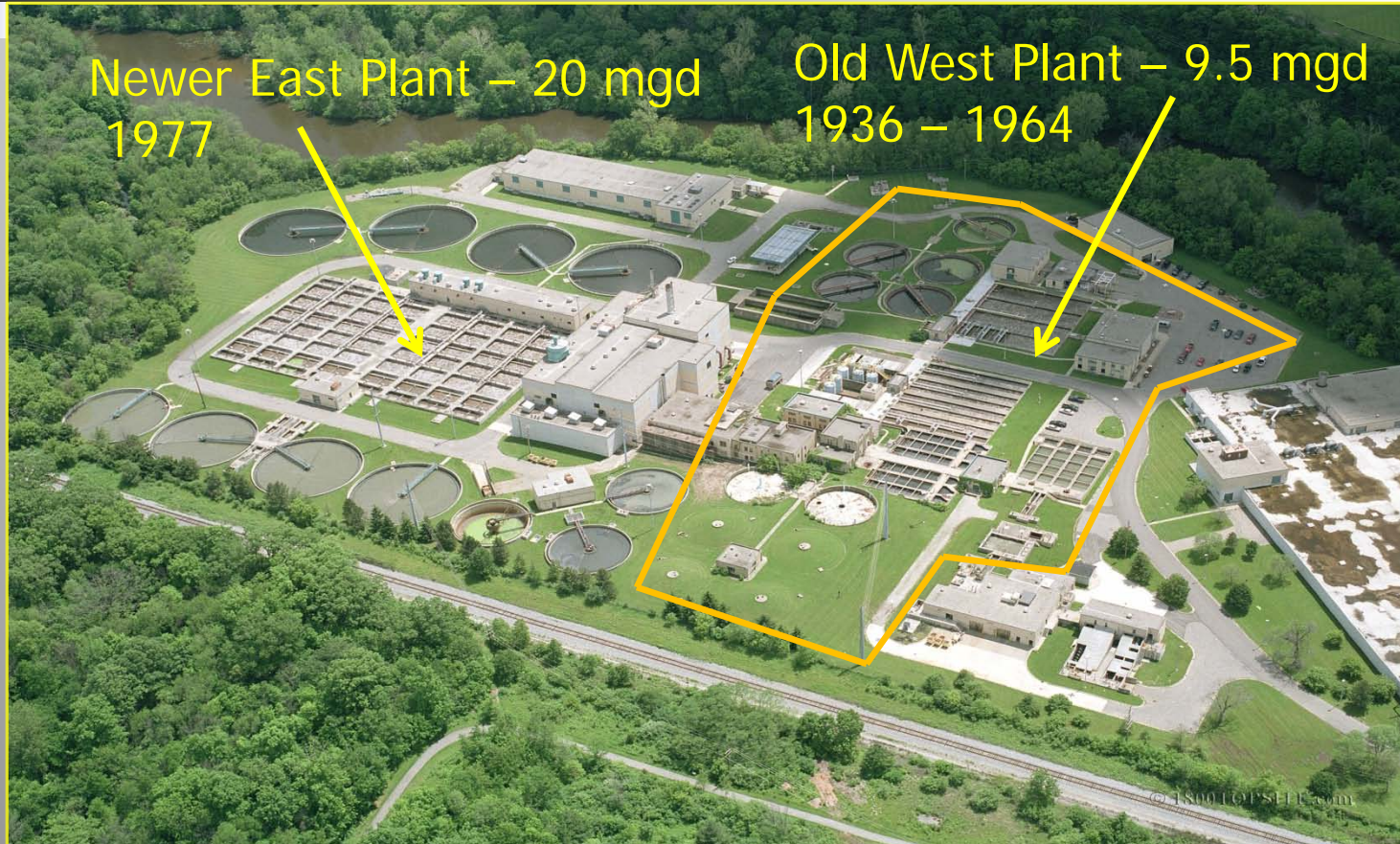
City of Ann Arbor WWTP

- Permitted capacity - 29.5 mgd
- Average daily flow - 18.5 mgd
- Maximum hydraulic flow – 48 mgd

Site Limitations



Plant Layout



Two plants in one, East and West

City of Ann Arbor WWTP



Office and Primary, West.

July 29, 1936.

West Plant originally constructed in 1936

City of Ann Arbor WWTP



City of Ann Arbor WWTP





Facilities Master Plan

- Comprehensive, long-term planning effort identifying capital improvement needs
- Assessment of structures, equipment and needed technology
- Assessment of plant capacity and future needs
- Recommended improvements, priorities and proposed funding schedule
- Completed January 2004

Facilities Master Plan Stakeholder Engagement



- Public
 - Project Team
 - Local Participation
 - Environmental Participation
 - Rate Payer Participation
 - Public Engagement Meetings
 - City Website
- City Council
- Environmental Commission



Facilities Renovations Project

Implement FMP Recommendations

- Replacement of West Plant
- Plant-wide Infrastructure Rehabilitation
- Improvements to East Plant



Stakeholder Engagement

- Plant Staff
 - Design Influence, Equipment Selection and Buy-in
- Ann Arbor Township Planning Commission
 - Presentations, Plan Review & Permitting
- Superior Township Planning Commission
 - Plan Review & Permitting
- Energy Commission
- Local Contractor Associations



History of Council Approvals

- Complex Design – Six Years
- Contract History with Malcolm Pirnie
 - Original Contract – March 2005
 - Amendment No. 1 – June 2006
 - Amendment No. 2 – February 2008
 - Amendment No. 3 – November 2008
 - Amendment No. 4 – June 2011



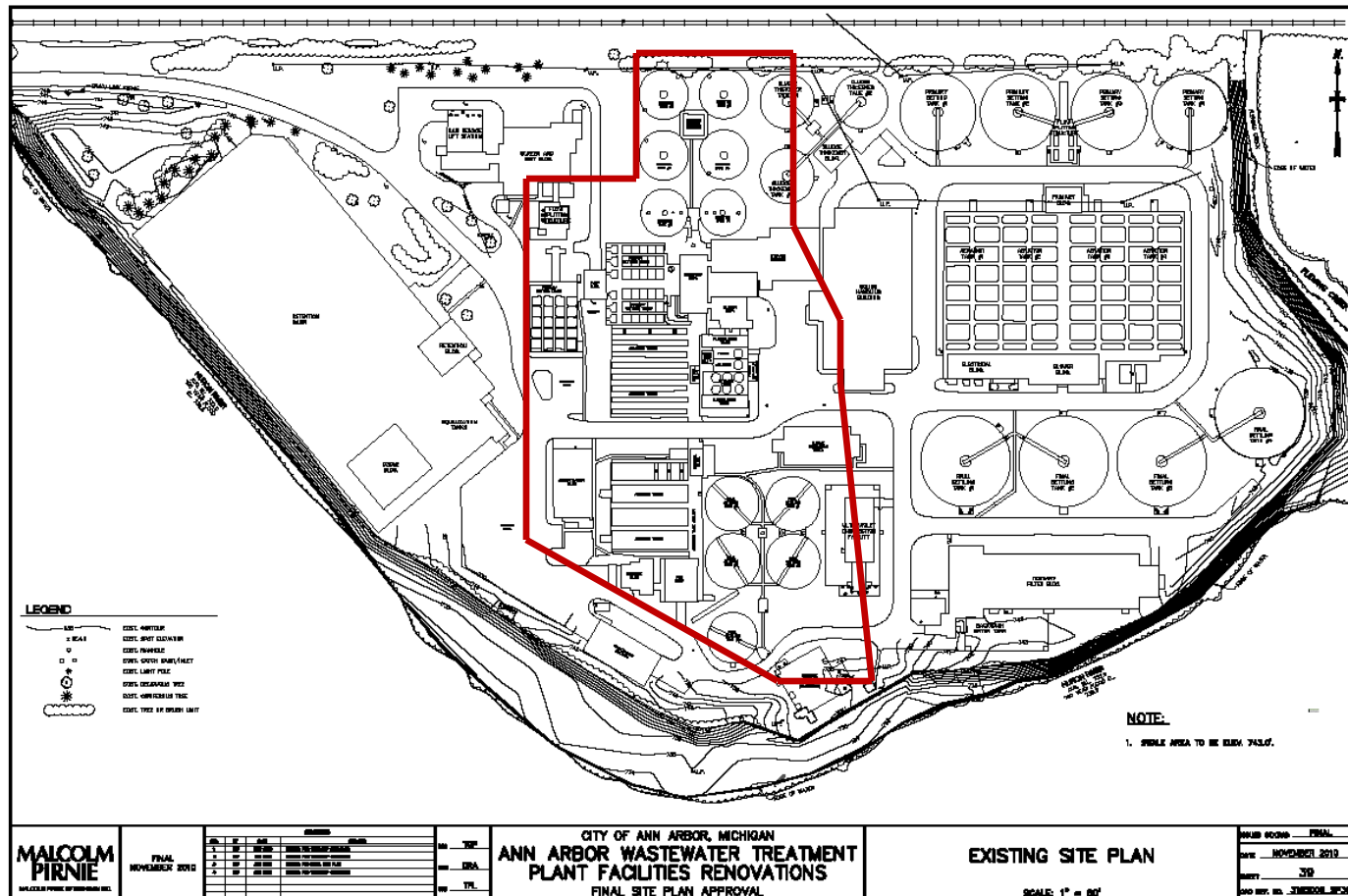
Regulatory History

- Preliminary Site Plan: 8/6/09 – 3/1/10
- FEMA Conditional Letter of Map Revision: 11/18/09 – 8/8/10
- Stormwater Management Plan 11/18/09 – 9/8/10
- Natural Features Impact Statement 11/18/09 – 12/6/10
- Final Site Plan: 8/18/10 – 12/6/10
- MDEQ Construction Permit: 5/23/11 – 10/7/11

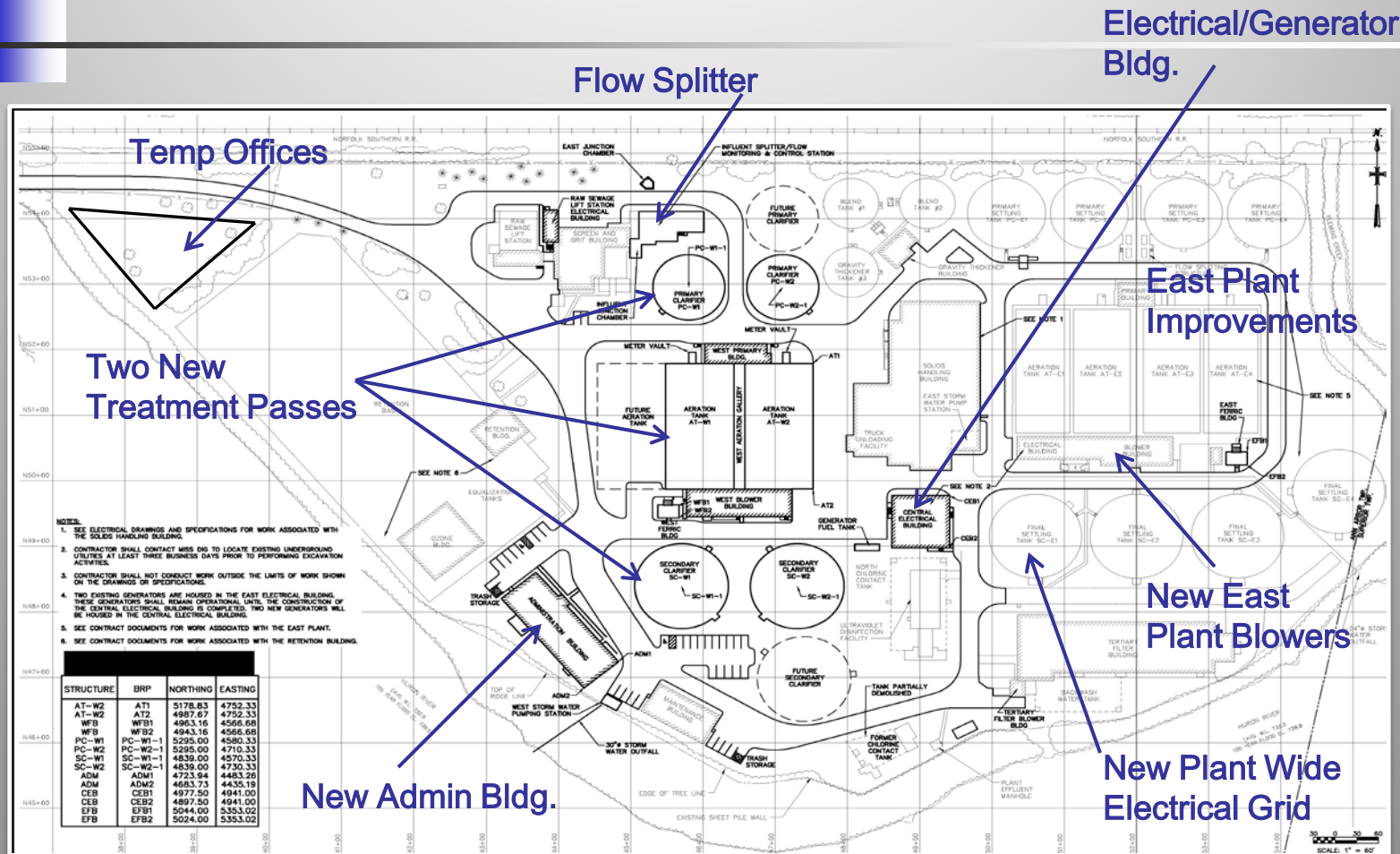
Project Improvements



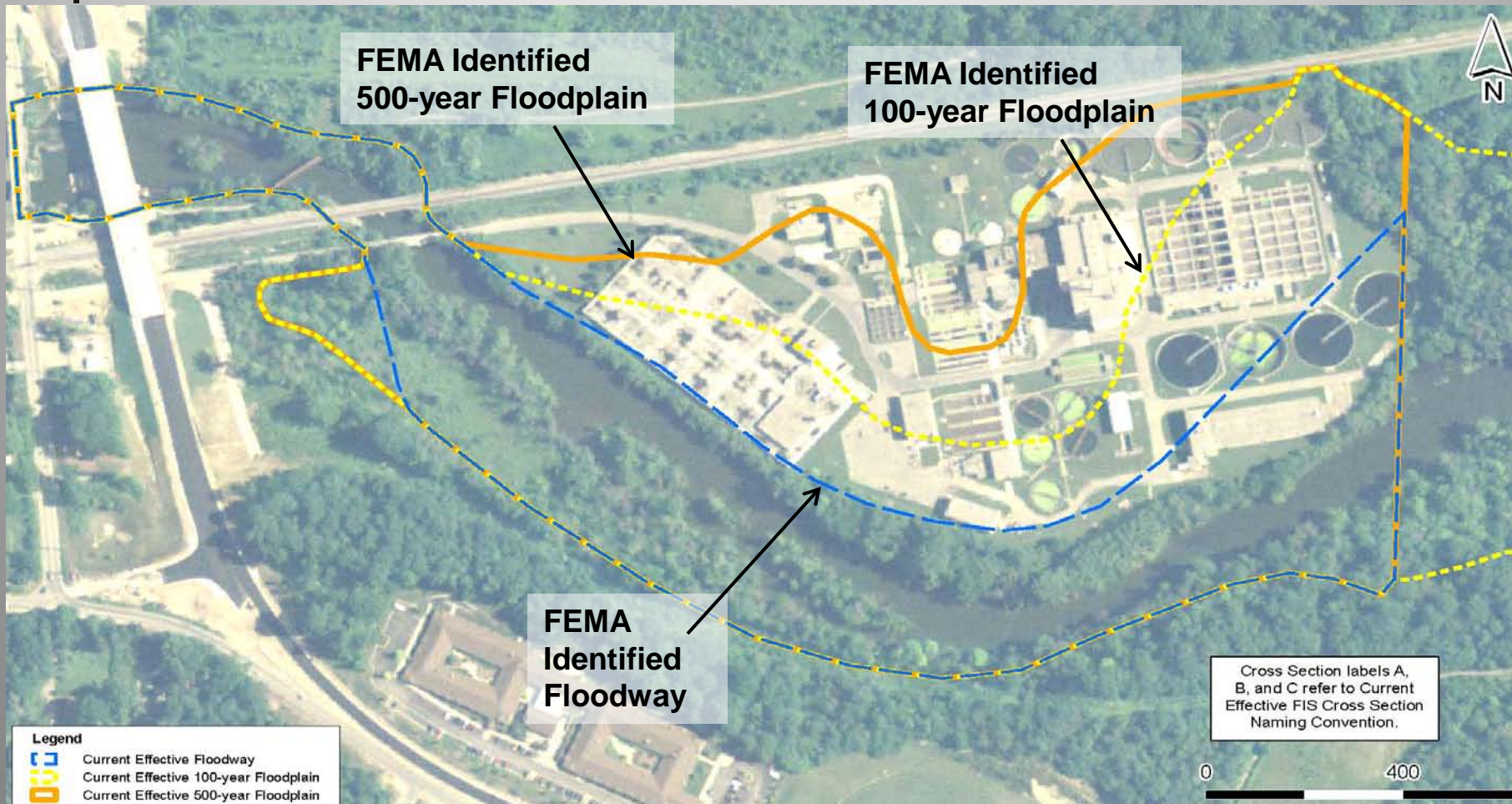
Site Demolition



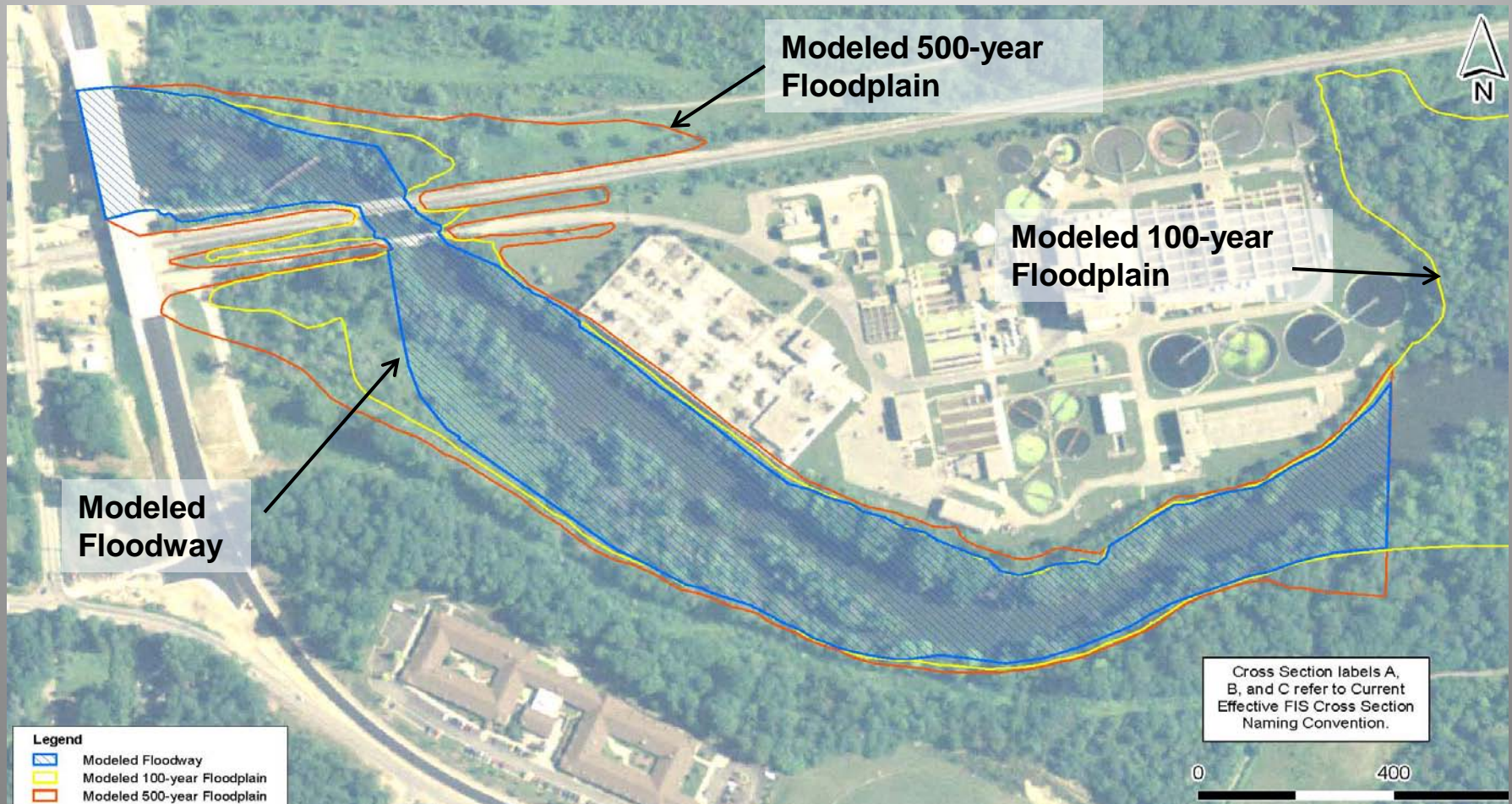
Project Site Plan



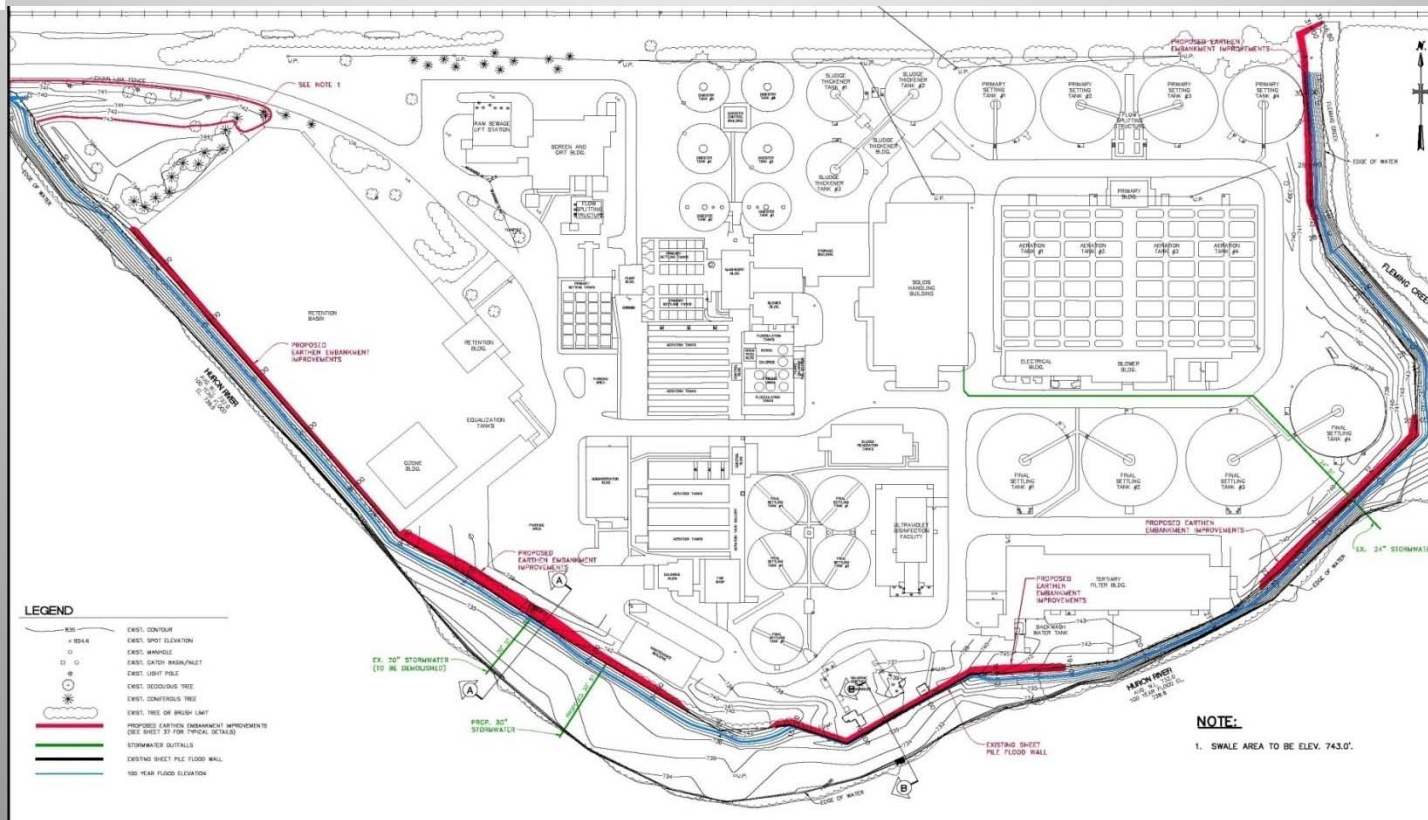
Current FEMA Floodplain Map



FEMA Conditional Letter of Map Revision



Embankment Improvements



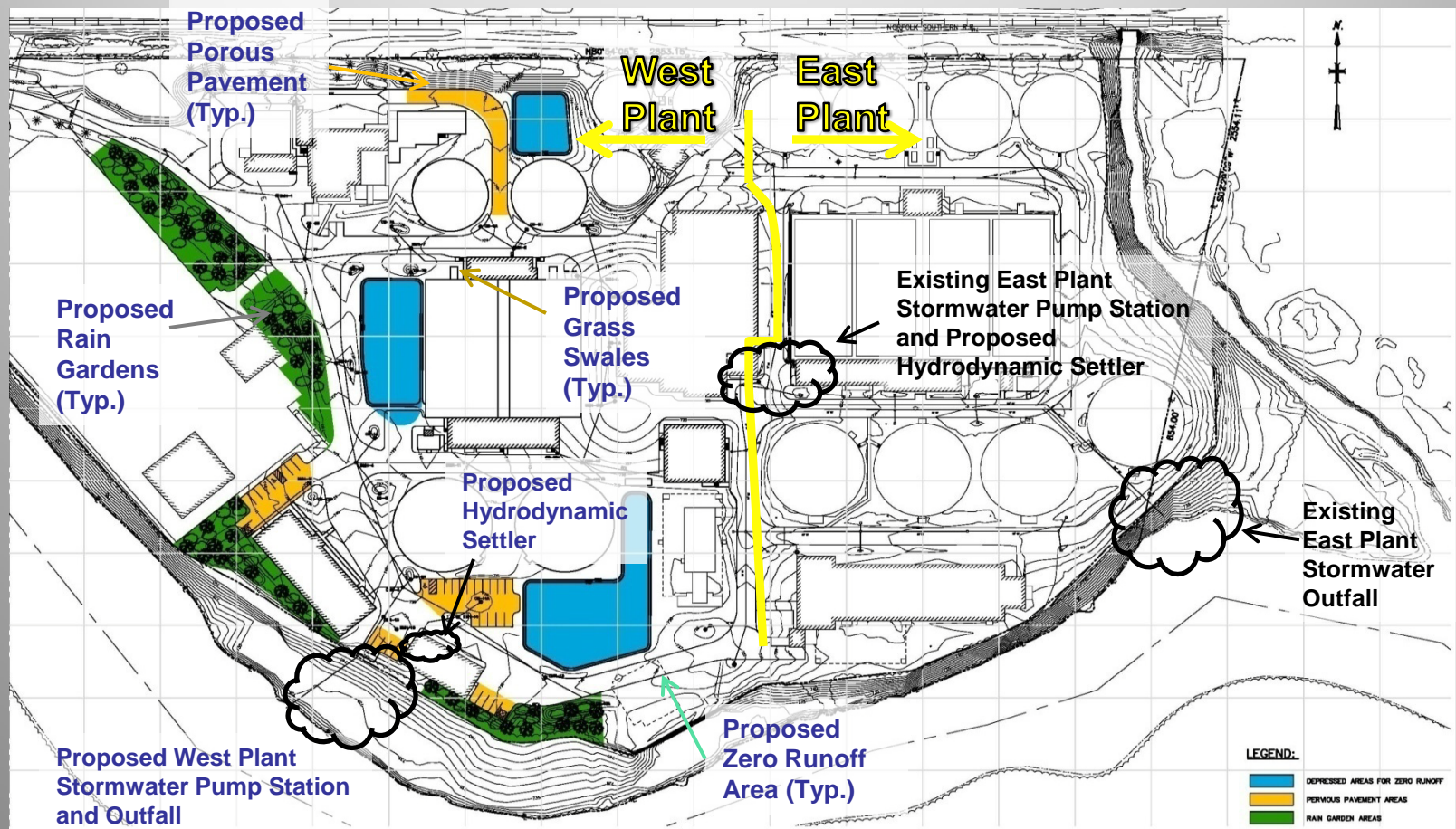
NFIP maps indicate site to be within regulated 100-year and 500-year floodplains



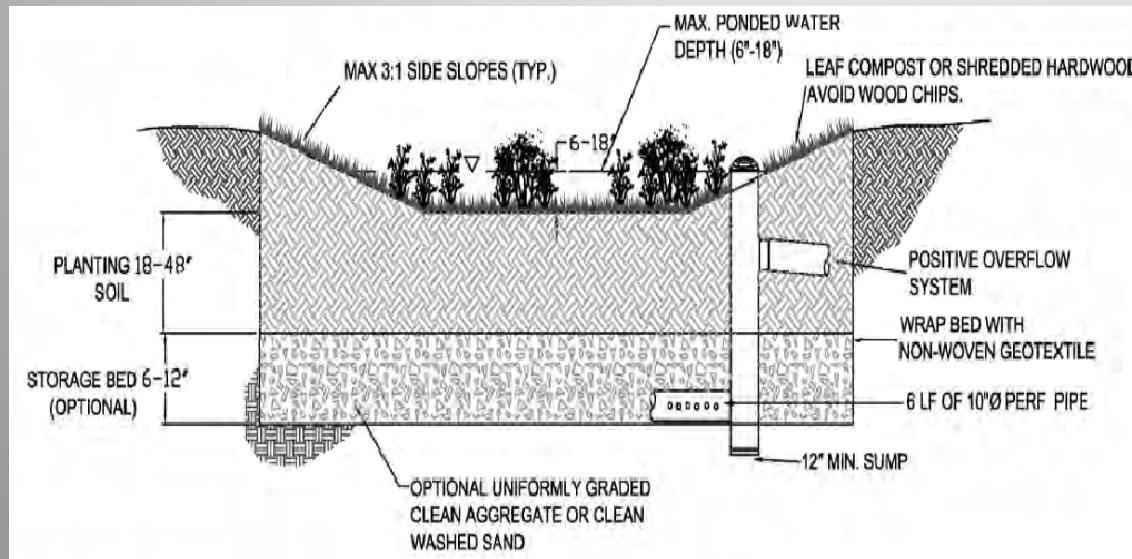
Stormwater Management Plan

- Zero-Net Runoff Areas including WWTP process capture
- Impervious area reduction
- Porous Pavement
- Rain Gardens
- Grass Swales
- Hydrodynamic Separators
- Reduced run-off quantity
- Improved run-off quality

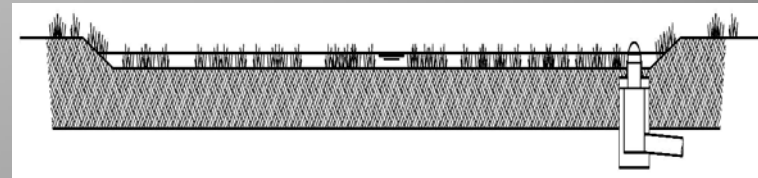
Stormwater Management Plan



Best Management Practices



Typical Grass
Swale Schematic



Best Management Practices

Typical Porous Pavement Schematic

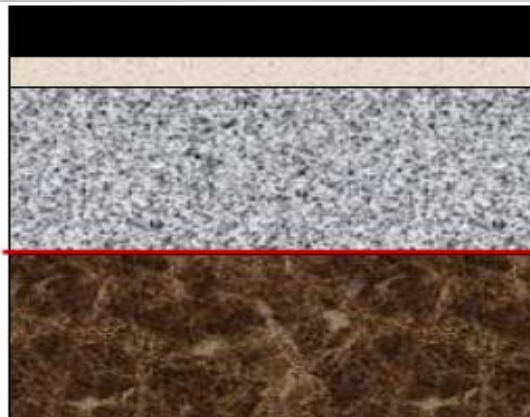
Pervious AC
Pavement

Choker
Course

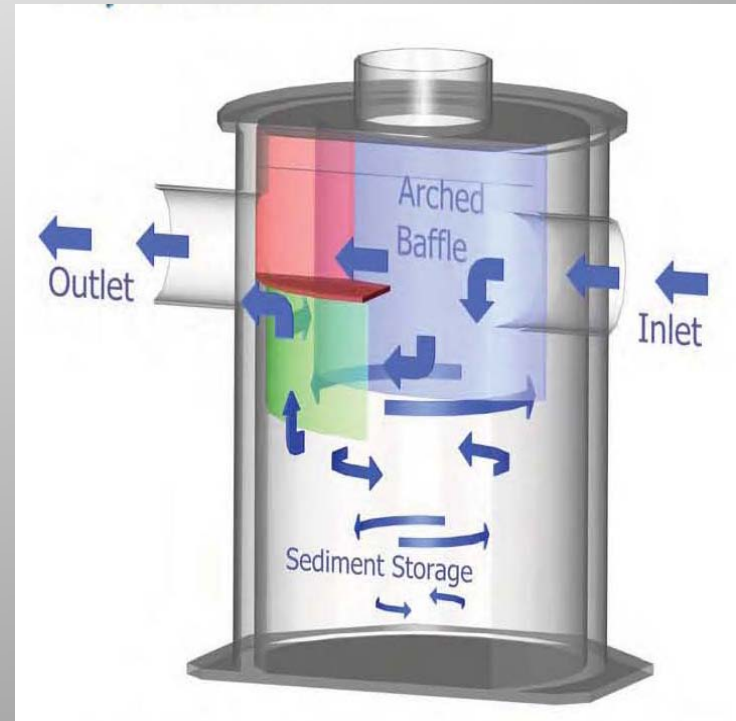
Coarse
Aggregate

Geotextile

Uncompacted
Sub-Grade



Hydrodynamic Separator



Source: Aqua-Swirl by AquaShield Stormwater Treatment Solutions



Energy Efficiency and Environmental Improvements

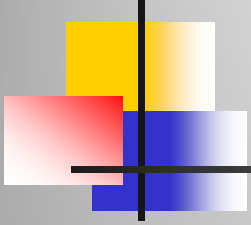
- New Efficient Aeration Blowers
- High Efficiency Motors
- LED Site Lighting
- Harmonics & Power Factor Correction
- VFD's on Equipment
- Efficient HVAC Equipment & Design
- Improved Stormwater Quality



Project Risks and Mitigation Measures

- Influent Sewers Under Access Road
 - Lined Sewers
- Overhead High Voltage Electrical Wires
 - DTE Relocated Overhead Wires
- Artesian Groundwater Conditions
 - Characterized Hydrogeological Conditions
 - Contract Provisions for Dewatering and Response Actions (On-site and Off-site)
 - Contractor and City Consultant Groundwater Monitoring During Construction

Project Risks and Mitigation Measures



- Maintain Plant Operation and Access Throughout Construction
 - Detailed Sequence of Construction
 - Prior Written Approval of Equipment Shutdowns
 - Standby Equipment for High Risk Shutdowns
 - Limitations on Vehicle Access



Facilities Renovations Project

- Included in the City's Approved CIP
- Scheduled to Follow Biosolids Capital Improvements Project
- Budget Included in Sewage Disposal System Financial Plan
- Approved for State Revolving Fund Loan



State Revolving Fund

- Approximately \$109 million in State Revolving Fund low interest loan (2.5%)
- Project is included on MDEQ's Project Priority List for funding



Additional State Funding

State Revolving Fund

- \$2.2 M in loan principal forgiveness for green project features
- \$256,153 grant for reimbursement of engineering design fees

Michigan Department of Treasury

- Estimated \$1.5 M savings from sales tax exemption for contractor purchases



State Revolving Fund Schedule

- SRF Application: July 2011
- Final Project Priority List: October 2011
- MDEQ Approval of Project Plan: 1/6/12
- MDEQ Order of Approval: 3/12/12
- SRF Loan Closing: 4/10/12



ITB No. 4191 Results

Lakeshore Toltest Corp.	\$ 83,302,048
Granger Construction Co.	\$ 89,990,000
Walsh Construction	\$ 92,929,000
Walbridge Aldinger	\$ 95,384,441
Hunt / Colasanti	\$ 99,990,000
Barton Mallow Co.	\$102,884,000



Requested Council Actions

- Notice of Intent to Issue Bonds – 1/9/12
- Construction Support Services Contract – 1/23/12
- Tentative Award of Construction Contract – 2/6/12
- Authorize Issuance of Bonds – 3/5/12
- Award of Construction Contract – 3/19/12
- Bond Closing – 4/10/12



Questions

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