St. Charles Riverwall

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Project Facts

- Restoration of Riverwall and Plaza of Historic Building
- Adjacent to the St. Charles Dam on the Fox River
- In River Work completed with use of Portadam™ System
- Treatment of Water before Discharging back into the Fox River
Portadam™ System

• Steel A-frame Structure
• Comes in Heights of either 5, 7, or 10 Feet
• Fabric Membrane Liner
• Bed Material

Courtesy of Portadam Inc.
Hydraulic Modeling

• Because of St. Charles Dam, Downstream Water Surface Elevation not Significant

• HEC-RAS Modeling Completed; Levee Used for Location of the Portadam

• Low Opening Upstream of Project; 0.1 Foot Requirement Became Critical
• Ownership of Dam was in Question, Hesitant to Pin Anything to Structure

• Same was True for Downstream End of Project with State Bridge Abutment

• Use of Sandbags Throughout Project

Hydraulic Modeling
Water Quality Standards

- Clear Water Standard Imposed as a Condition of 404 Permit for Fisheries Protection
- Standard Originated with SWCD Review of Project
- Standard was Cleaner than Background
- Original Std = 10 NTU
- Allowed Std = 20 NTU

Discharge water once it had been cleaned.
Permitting

- IDNR-OWR
- USACE
- Kane County Stormwater
- KDSWCD Review
- USFWS
- IDNR
- IHPCA
- NPDES
Construction

• In-River work was completed in approximately 3 months

• 1 ION for discharge of high turbidity water

• Plaza restoration will be completed in Spring 2010
Installation of Portadam System
Installation of Portadam System

Sandbags
Dewatering Operations

- Pumps
- Flocculant
- Sand Filters
- Weir Tank
- Bag Filters
- Automated Water Quality Monitoring System
Dewatering Operations

- Weir Tank
- Bag Filters
- Storage Tank
- Turbidity Reading
- Discharge back to storm sewer
Construction

Discharge from downstream

Intake for filtration system

Platform being reconstructed
Construction

Fish Ladder
Construction
Disassembly of System

- Turned Pumps off for Downstream Section; Maintained Upstream Section
- Removed Downstream Liner and Frames
- Turned Pumps off for Upstream Section
- Removed Frames and Liner for Upstream Section
- Removed All Dewatering Equipment
Lesson’s Learned

- Flood contingency plan important.
- Dam construction and disassembly required sequence approval by resource agencies.
- Design should include a plan that can be permitted and constructed (We knew that!).
- Contractor experience with in water construction near a dam is crucial.
- Dewatering specifications/details very important.
- Algae can be serious issue although not technically a pollutant. It impacts permitted dewatering plan.
Questions?

Thank you for your attention.