The River Raisin Great Lakes Legacy Act Sediment Remediation Project

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Background/Objectives. River Raisin (Monroe, Michigan) was designated a Great Lakes Area of Concern in 1987 due to nine beneficial use impairments, including several related to impacted sediment. The primary contaminants of concern in the sediment are PCBs. Approximately 20,000 cubic yards of impacted sediment were addressed by a 1997 sediment removal action. Clean closure was achieved and documented. Some years later, post-removal monitoring by U.S. Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality (MDEQ) indicated that PCBs had recontaminated the river in the area of the prior removal and elsewhere in the river.

Approach/Activities. In 2004, MDEQ submitted an application to the Great Lakes Legacy Act (GLLA) Program for a project in the River Raisin AOC to address PCB-impacted sediment. U.S. EPA’s Great Lakes National Program Office (GLNPO) conducted a site investigation using 100% GLLA funds. This site investigation provided the requisite information to proceed with a sediment remediation project under the GLLA Program.

Results/Lessons Learned. Sediment remediation projects under the GLLA require a non-federal sponsor to provide either funds or in-kind services as a match to federal funds. At River Raisin, GLNPO, EPA and an industrial entity collaborated to find the necessary matching funds and in-kind services for a GLLA sediment remediation project to proceed in 2012. Lessons learned from the multi-stakeholder, multi-year process will be provided. These lessons learned highlight the value of the GLLA as an effective, efficient alternative to Superfund.
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Battelle’s 7th International Conference on Remediation of Contaminated Sediments, Dallas, Texas
February 5, 2013
River Raisin GLLA Project
Time Frames

- **Great Lakes Legacy Act Agreement Signed**
  - Executed on April 3, 2012 by MDEQ and U.S. EPA
  - $17.3M total cost ($11.2M USEPA, $6.1M MDEQ)
- **Construction Contractor**
  - Environmental Restoration
  - Subcontractors: JF Brennan Company, Natural Resource Technology
- **Two Components**
  - CDF Excavation (Sterling State Park Confined Disposal Facility)
  - Sediment Remediation
- **Mobilization Started May 7, 2012**
- **CDF Excavation Started June 4, 2012**
- **Dredge Mobilization on June 4, 2012**
- **Dredging Began on July 9, 2012**
- **Planned Remediation Completed in November**
Overview of Site History

- **1987**: Raisin River designated a Great Lakes Area of Concern (AOC)
  - Nine (9) Beneficial Use Impacts (BUIs), including those directly related to contaminated sediments
  - **PCBs** are the primary chemicals of concern
- **1997**: Ford Implemented a Sediment Removal Action Under a USEPA Consent Order
  - Approximately 20,000 cubic yards of the most contaminated sediments were removed
- **1998-2002**: USEPA and Michigan DEQ conducted Post-Remediation Monitoring
  - PCBs were identified in areas not covered by the 1997 dredging, and some in the footprint of the SRA
  - Biological sampling indicated uptake of PCBs in fish and sediment dwelling organisms
PCB Uptake in Caged Fish
2001

- Near RR Bridge (Upstream of SRA)
- Adjacent to SRA
- River Mouth (Downstream of SRA)

** All Aroclors were Less than the Detection Limit
Direct Impact of PCB Contamination on Beneficial Use Impairments

- Restrictions on Fish and Wildlife Consumption
- Bird or Animal Deformities or Reproduction Problems
- Restrictions on Dredging
Dredging
Dredging Details

- 109,000 Cubic Yard of Total Dredging
  - 3,000 CY of TSCA (>50 ppm PCBs)
  - 106,000 CY of non-TSCA (<50 ppm PCBs)

- TSCA Dredging
  - Mechanical Dredge with Silt Curtains
  - Processing at Ford Property
  - Disposal at EQ’s Wayne County Landfill

- Non-TSCA Dredging
  - Hydraulic Dredge with Pipeline
  - Disposal at Sterling State Park CDF
Proposed Remediation Areas (2003 vs. 2012)

2003: 94,000 Cubic Yards

Area Eliminated
Due to presence of Lotus beds.

2012: 109,000 Cubic Yards
Mechanical Dredge
Hydraulic Dredge
Dredging Operations: 12” Cutterhead Dredge
Cleanup Operations: 8” Cutterhead Dredge
CDF Excavation
CDF Excavation Overview

- Use of CDF required EPA and MDEQ to remove an equal volume (106,000 CY)
  - Preserved capacity at CDF for future maintenance of the navigation channel
- Extensive chemical testing identified 112,000 CY of material identified as “inert” by MDEQ
- Material to be excavated, dewatered, and stockpiled on Ford property for future use at the site
Excavation Location & Transport Route
CDF Excavation Details

- Hours of Operation: Typically 6AM to 6PM
- Approximately 7,000 truck loads
  - 40 to 50 trucks per day
- Avoid Major Event Days at State Park
  - Fireworks
  - Walk/Race Events
  - Harvest Festival
- Excavation Activities: June through January
- Truck wash and Street Wash to prevent soil and mud on roadway
Construction Schedule

- May 7: Mobilized CDF Excavation Equipment
- June 4: Mobilized Dredging Equipment
- June 4: Began CDF Excavation
- July 9: Began Dredging
- October 7: Complete Dredging
- October 23: Completed Sand Cover Placement
- November 3: Demobilized Dredge Equipment
- January 14: Completed CDF Excavation
- January 31: Site Restoration and Demobilization
Outreach

- May 9: Public Notice of MDEQ Dredging Permit
- May 10: Presentation to Commission on the Environment and Water Quality
- June 14: Public Information Session
- July 1: Flyers available for State Park Visitors and Marina Users
Coordinating Agencies

- U.S. EPA
- Michigan DEQ
- U.S. Army Corps of Engineers
- Port of Monroe
- City of Monroe – Committee on the Environment and Water Quality
Value of GLLA

- GLNPO is a great partner
  - Expertise
  - Creative problem-solving
  - Stakeholder assistance
  - Focus on results, not process
  - Efficiency
  - Earlier site remediation
  - Funding
Acknowledgements

- **USEPA-GLNPO**
  - Scott Cieniawski, cieniawski.scott@epa.gov, 312-353-9184

- **Michigan DEQ**
  - Mike Alexander, alexanderm2@deq.gov, 517-335-4189
Questions

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