

The Ottawa River Great Lakes Legacy Act Cleanup Project

March 12, 2009

Ottawa River Project Timeline

- **January 1998 to December 2007** – Various entities sample the site, source control implemented (including sediment remediation in Unnamed Tributary)
- **June 2005** – USFWS sends interest letters to PRPs
- **August 2007** – OEPA assembles PRPs
- **January 2008** – Companies form ORG
- **March 2008** – ORG applies for GLLA funding for design of a remedy for the Ottawa River (includes additional investigations)
- **June 2008** – ORG and USEPA sign a \$1.5M cost-sharing agreement for sampling and design work
- **June-August 2008** – ORG/USEPA investigation

Ottawa River Project Timeline

- **September 2008:** ORG completes alternatives analysis
- **October 2008:** ORG completes Preliminary Design Document
- **October 2008 –** ORG applies for GLLA funding for remediation of the Ottawa River
- **December 2008 –** ORG submits pre-final design
- **December 2008 –** Public meeting in Toledo, Ohio to present and discuss project
- **January 2009 –** ORG addresses comments on the pre-final design from stakeholders
- **January 2009 –** ORG and USEPA signs Project Agreement with USEPA for remediation funding

OTTAWA RIVER PROJECT TIMELINE

- **February 2009 to August 2010:** Public outreach, communications, and project updates.
 - March 2009 Public Meeting?
- **July 2009:** Mobilization and construction activities begin at Hoffman Road Landfill
- **August 2009 to December 2009** – Dredging activities initiated. All TSCA sediments dredged, dewatered and disposed.
- **April 2010** – Dredging activities restart
- **August 2010** – Dredging Complete
- **October 2010** – Dewatering activities complete; Cover layer placement complete
- **December 2010** – All construction activities complete

OTTAWA RIVER GROUP

- Allied Waste Industries, Inc.
- Chrysler LLC
- City of Toledo
- DuPont Co.
- GenCorp Inc.
- Honeywell International Inc.
- Illinois Tool Works, Inc.
- United Technologies
- Unnamed Tributary Group

OUTLINE OF PROPOSAL PRESENTATION

I. INTRODUCTION AND HISTORY

II. PROPOSED PROJECT

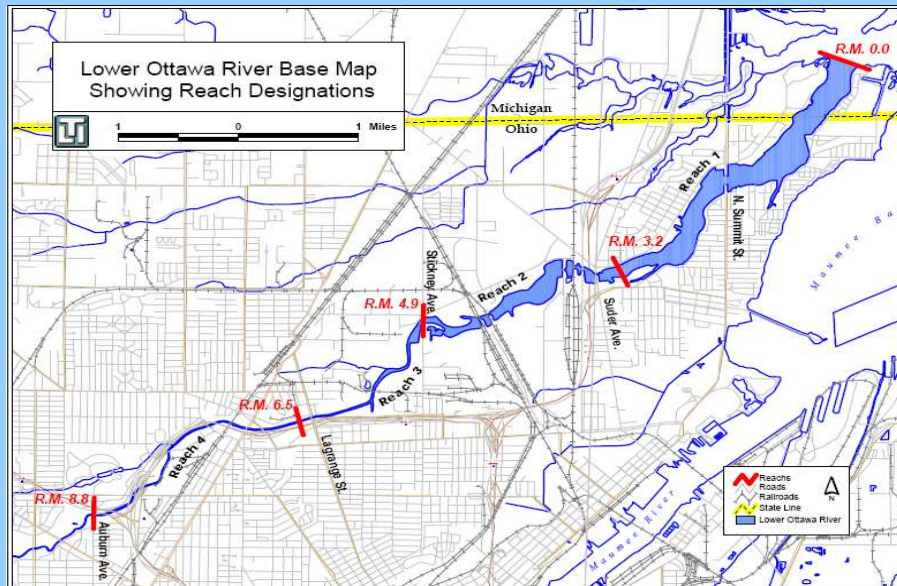
III. SCHEDULE AND COSTS

IV. CONCLUSION

I. INTRODUCTION AND HISTORY

LOCATION

- The Ottawa River is located in Toledo, Ohio.



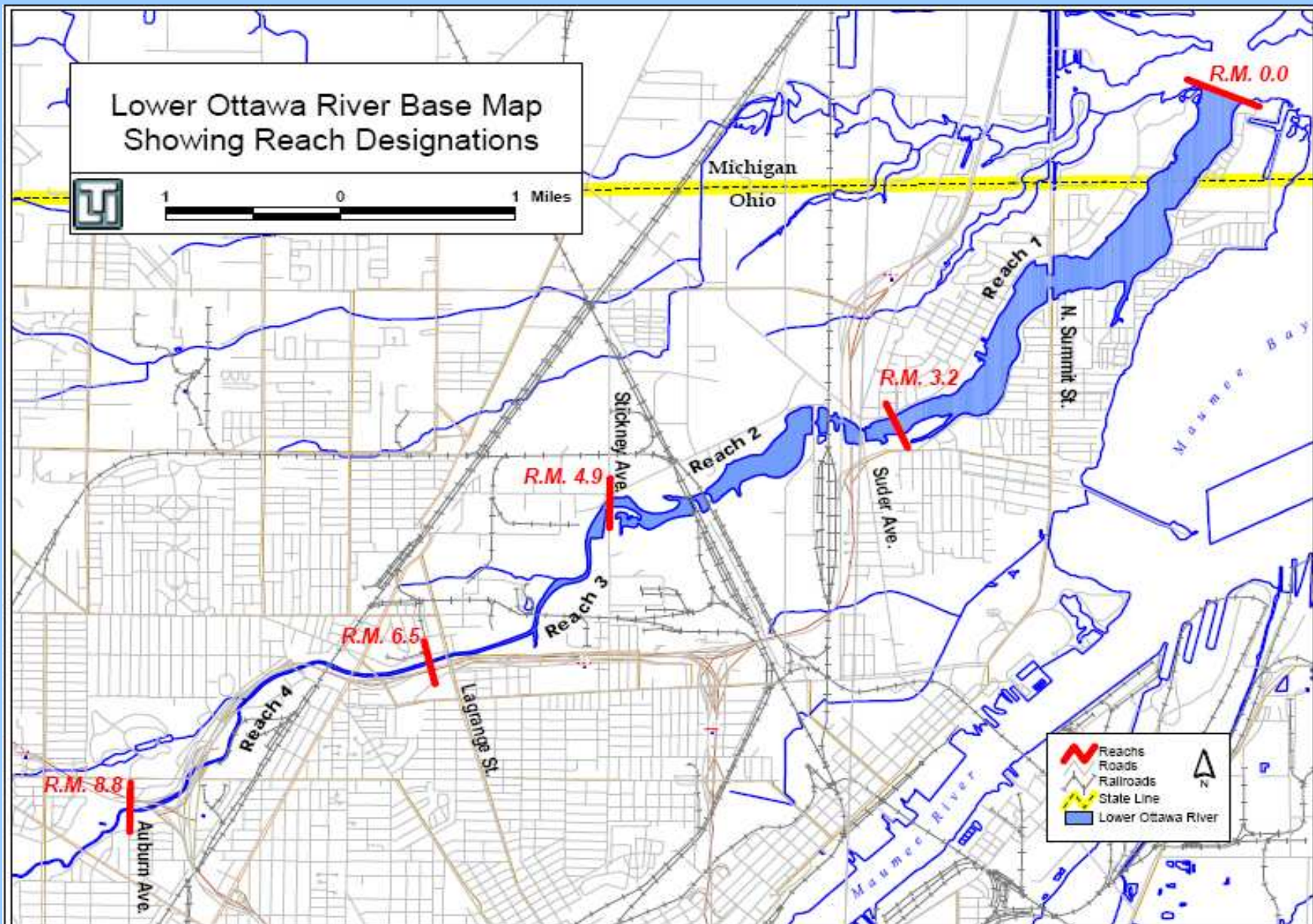
The Project is within an “**Area of Concern**” as defined by the International Joint Commission.

OTTAWA RIVER HISTORY

Ottawa River is a tributary to Maumee Bay

Contaminant sources included, but are not limited to:

- Multiple Landfills
- Combined Sewer and Sanitary Sewer Overflows (6 CSOs and 2 SSOs still active)
- Unnamed Tributary (Fraleigh Creek)
- Stickney West Industrial Park (SWIP) and Royster Fertilizer
- Toledo Tie Treatment Facility
- XXKem



OTTAWA RIVER HISTORY (Cont'd)

- Recent Cleanup Actions
 - Stickney and Tyler landfills capped in 1998
 - XXKem Site capped and extraction trench installed in 1998
 - GenCorp / Textileather Cleanup completed 1998
 - AquaBlock™ Project
 - Toledo Tie Treatment sediment removed and barrier installed in 1998
 - Dura Landfill capped in 2001
 - SWIP Property cleaned up and developed as Brownfield
 - CSO work identified and scheduled by City of Toledo

STATEMENT OF COMMITMENT FROM ORG

- Investigations, feasibility and design studies are complete. Alternatives have been evaluated and compared. Project design activities currently ongoing.
- The proposed comprehensive cleanup plan presented today is ready to be implemented, subject to appropriate public participation.
- The Ottawa River Group is prepared to fund up to 50% of the local share and accept complete responsibility for the long-term operation, maintenance and monitoring of the disposal facility (as necessary).

II. PROPOSED PROJECT

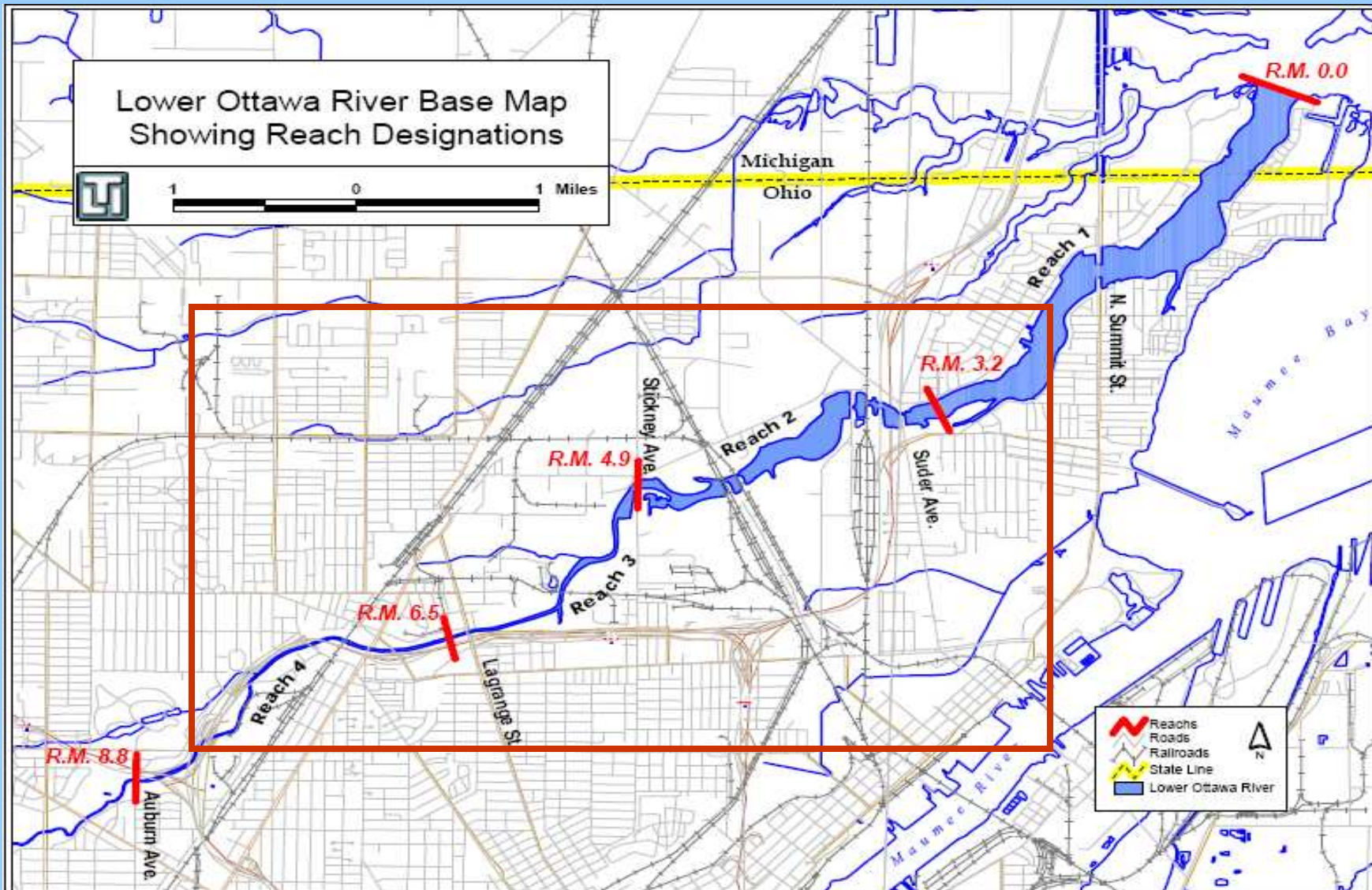
OTTAWA RIVER PROJECT AREA

The Ottawa River **Project Area** was determined based upon extensive sampling and analyses events from 1998 to 2008.

The Ottawa River **Project Area** has generally been delineated into 4 segments:

- **Reach 1:** Maumee Bay to approximately river mile (RM) 3.2
- **Reach 2 and Stickney Avenue Depositional Zone (SADZ):** RM 3.2 to approximately RM 4.9
- **Reach 3 and Sibley Creek:** Approximately RM 4.9 to approximately RM 6.5
- **Reach 4:** Approximately RM 6.5 to RM 8.8

PROJECT AREA



PROJECT AREA



OTTAWA RIVER PROJECT OBJECTIVES

- ***Remove*** a significant volume of contaminated sediment mass
- ***Contain*** the removed sediment in a disposal facility
- ***Reduce*** human health and ecological risks to acceptable levels
- ***Improve*** the chemical, physical and biological integrity of the Ottawa River ecosystem
- ***Provide*** a revitalized Ottawa River ecosystem to the community
- ***Eliminate*** a hydrologic unit from an “Area of Concern” in the Great Lakes

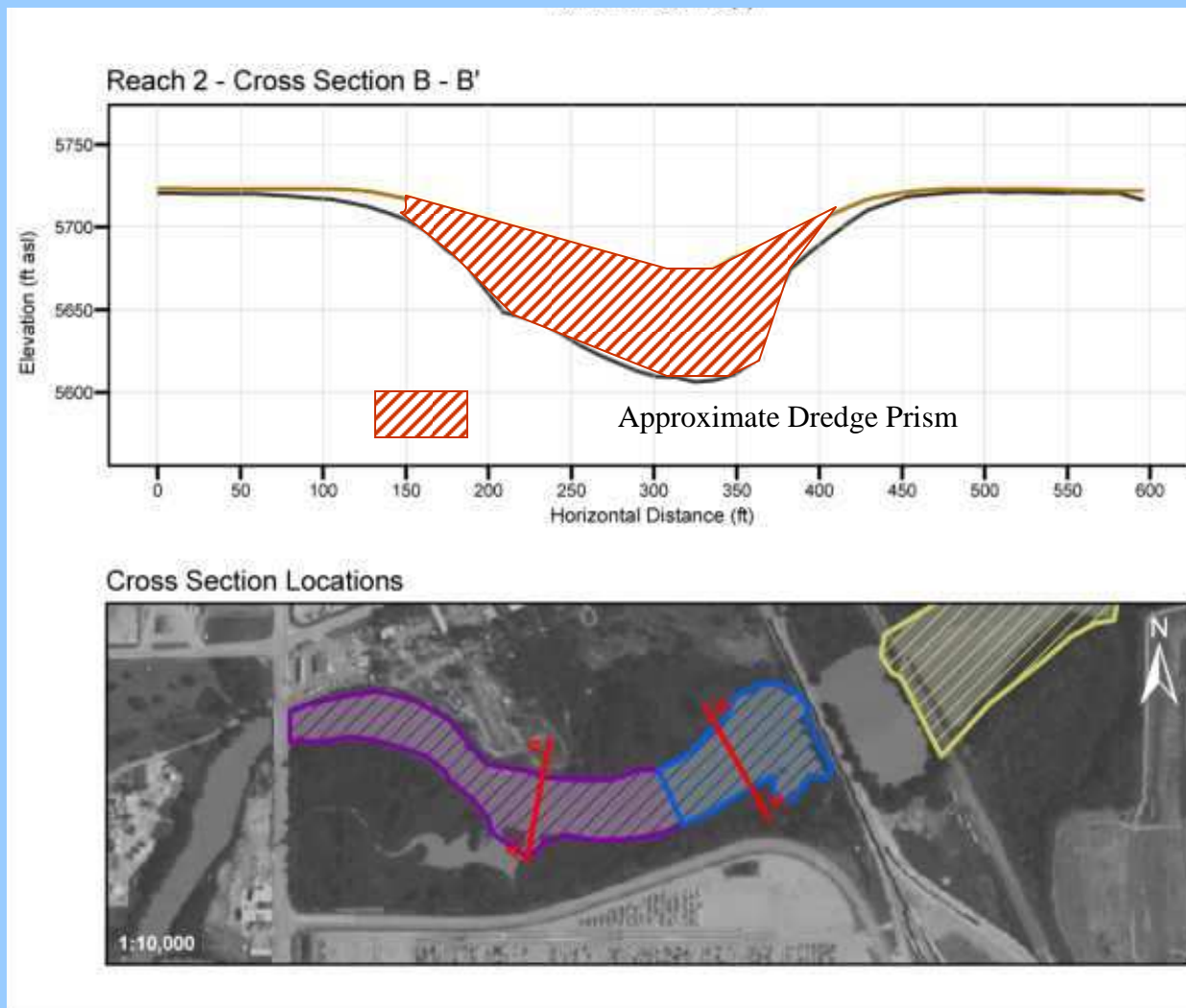
OTTAWA RIVER SEDIMENT CONDITIONS

Primary Contaminants of Concern are:

- Polychlorinated Biphenyls (“PCBs”)
- Polyaromatic Hydrocarbons (“PAHs”)
- Lead
- Oil and Grease



TYPICAL CONTAMINANT DISPERSION IN A RIVER SYSTEM



POTENTIAL ROUTES OF HUMAN EXPOSURE

Direct Contact

- PCBs present at concentrations up to 451 mg/kg in top 4-inches of sediment (2007)
- Direct contact advisories within the Project Area

Fish Consumption

- Elevated concentrations of PCBs detected in carp tissue in 2007 (1.6 to 5.5 mg/kg). “Do Not Eat” level is 2.0 mg/kg.
- Fish advisories exist for all species from within the Project Area

EXCEEDENCES OF APPLICABLE SEDIMENT SCREENING LEVELS

(From EPA 2007 Study)

Probable Effect Concentrations (PEC)

(level above which harmful effects are likely to be observed)

PCBs – 7 of 10 sample locations exceeded PEC

PAHs – 8 of 10 sample locations exceeded PEC for 2 or more PAH compounds

Lead – 3 of 10 sample locations exceeded PEC

GENERAL CONSIDERATIONS FOR REMEDIAL OPTIONS



Sediment removal using environmental dredging techniques



Evaluation of major sources of chemical contamination storm or sanitary sewer discharges, landfills, spills, etc.

Dewatering/disposal of contaminated sediments



OTTAWA RIVER PROJECT COMPONENTS

- Environmental dredging
- Sediment cover (if appropriate)
- Transportation
- Dewatering
- Disposal
- Monitoring during operations
- Operation and Maintenance (as necessary)



GUIDELINES FOR DREDGING SCENARIO

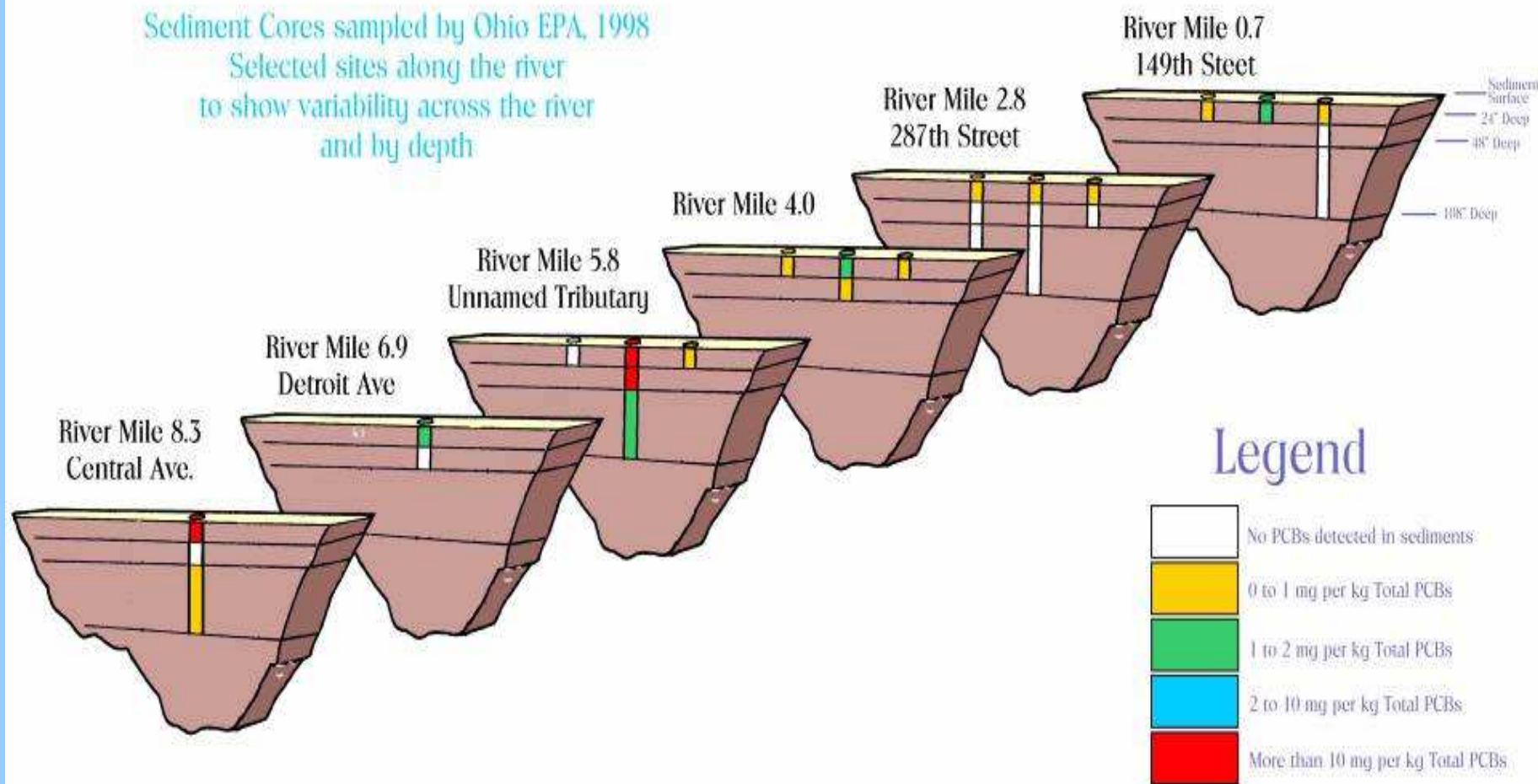
- Prepare cross sections every 100 ft
- Interpolation of PCB, PAH, lead and oil & grease data at various depths
- Plot isoconcentration lines
- Evaluate cross sections evaluated (utilize co-located chemistry as part of developing design)
- Develop dredging scenarios (cutlines) development



Typical Cross Sections

Ottawa River Sediments

Sediment Cores sampled by Ohio EPA, 1998
Selected sites along the river
to show variability across the river
and by depth



SCREENED REMEDIAL ALTERNATIVES

- No Action
- Monitored Natural Recovery
- Capping
- Post dredging Objective
- Long Term Objective
- Cover System
- Natural Recovery



REMEDIAL ALTERNATIVES SCREENING CRITERIA

- **EFFECTIVENESS**
 - Short- and long- term effects on human health and environment
 - PCB, PAH, lead and oil & grease removed from system
 - Risk reduction
- **IMPLEMENTABILITY**
 - Quantities of sediment dredged
 - Public acceptance
 - Disposal options
 - Access
- **COSTS**
 - Capital and In-Kind
 - O &M

PROPOSED REMEDIAL OPTION

- Hydraulically dredge approximately 250,000 cubic yards of sediment (approximately 25,000 TSCA)
- Transport sediments via pipeline
- Dewater sediments utilizing geotextile tubes
- Treatment of weep water to Ohio water quality standards
- Dispose sediments in a permitted facility
- Perform operations and maintenance program
- Allow natural recovery of system

ANTICIPATED BENEFITS OF PROPOSED OPTION

- Removes majority of contaminant mass (e.g. approximately 90% of PCBs)
- Properly treats water and securely contains contaminated sediments
- Reduces human health and ecological risks to acceptable levels
- Broadly improves the Ottawa River ecosystem;
- Revitalizes a community resource – the Ottawa River
- Restores beneficial uses to a Great Lakes Area of Concern

DESIGN BASIS FOR PROPOSED PROJECT

Dredging cutlines based on target concentrations

- PCB- 5 mg/kg
- PAH – 30 mg/kg
- Lead – 200 mg/kg

Estimated post dredging surface weighted average concentration (SWAC)

- PCBs – 1.5 mg/kg
- Total PAHs (16) – 30 mg/kg
- Lead – 200 mg/kg

Long Term SWAC / natural recovery goals

- PCBs – 0.75 mg/kg
- Total PAHs (16) – 22.8 mg/kg
- Lead – 128 mg/kg

Dewatering Process



PROPOSED PROJECT DESIGN ELEMENTS

- Hydraulic dredging upstream to downstream
- Turbidity monitoring before, during, and after dredging
- Option A - Transporting TSCA sediment via pipeline to dewatering facility with geotextile tubes, Transferring dewatered sediment to TSCA facility
- Option B- Transporting remaining sediments via pipeline to either the existing Hoffman Landfill, a newly constructed cell or another commercial facility
- Dewatering sediments through use of geotextile tubes;
- Disposing non-TSCA sediments
- Treating and discharging weep water to Ottawa River through NPDES
- Allowing re-sedimentation of river (estimated to be 0.4 cm/year – anticipated to be higher in dredged area)

III. SCHEDULE AND COSTS

PROPOSED SCHEDULE

Final Design and Specifications	March 2009
Design/Permit Approval/Procurement	April 2008
Contracting and Mobilization for Disposal Facility Construction	April 2009
Begin Disposal Facility Construction	April 2009
Begin WTP Construction	May 2009
Procurement/Contracting and Mobilization for Dredging	June 2009
Begin Dredging Sediments	June 2009
Dredging Complete	September 2010
Placement of Landfill Cover	August 2010
Begin Post-Closure O&M	October 2010

COST ESTIMATE

Design & Land Acquisition	\$ 1,400,000
Site Setup and Construction Activities	\$ 1,000,000
Landfill Costs (based on constructing cell)	\$ 8,000,000
Material Placement	\$ 2,000,000
Water Treatment	\$ 6,300,000
Dredging	\$ 9,000,000
Transportation	\$ 3,700,000
Administrative	\$ 2,700,000
Contingency 20%	\$ 6,820,000
Total Funding	\$ 40,920,000

Total Local Share (50%): \$ 20,460,000

Total GLLA Share (50%): \$ 20,460,000

Total Project Cost: \$ 40,920,000

CONCLUSION

- Design for remediation is underway
- Bid specifications being prepared
- Project team is experienced with GLNPO process
- Project implementation can be phased to accommodate multi-year funding (if necessary)
- Ottawa River Group is a viable Local Sponsor

The Ottawa River Group's project -

- SATISFIES THE GLLA STATUTORY QUALIFICATIONS AS A PRIORITY PROJECT;
- REMEDIATES A SIGNIFICANT PORTION OF AN AOC; and
- IS READY TO BE IMPLEMENTED.

Questions

T. Casey Stephens
Commissioner, Public Service
Hoffman Road Landfill
3962 Hoffman Road
Toledo, OH 43611
419.936.2643
Casey.Stephens@toledo.oh.gov