Grasse River Superfund Site

Public Meeting

November 14, 2012
7:00 PM

Massena Central High School
Massena, NY

www.epa.gov/region02/superfund/npl/aluminumcompany/

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Douglas Fischer, Assistant Regional Counsel
Dave Kluesner, Community Involvement Coordinator
Pete Mannino, Western New York Remediation Section Chief
Marian Olsen, Dr.PH, Human Health Risk Assessor

Agenda

- Introduction
- Superfund Process
- Site History and Background
- Investigation Results
- Preferred Remedy
- Questions and Answers

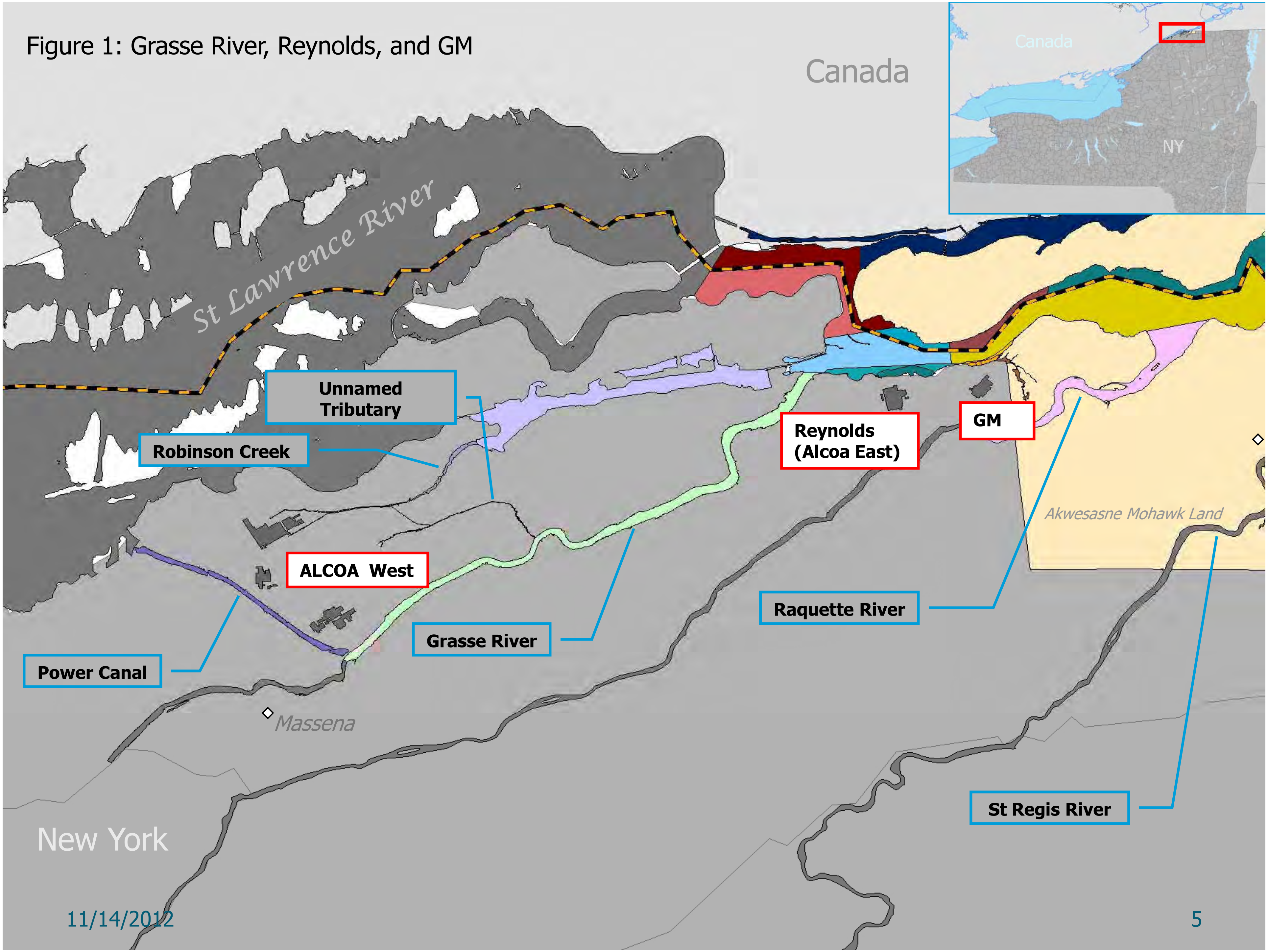
Comprehensive Environmental Response, Compensation, and Liability Act

- Toxic waste disposal disasters prompted passage by Congress in 1980
- Provides federal funds for cleanup of hazardous waste sites and to respond to emergencies involving hazardous substances
- Empowers EPA to compel responsible parties to pay for or conduct necessary response actions

Superfund Remedial Process

- Site Discovery and Ranking
- Site Placed on National Priorities List
- Remedial Investigation/Feasibility Study
- Proposed Remedy
- Record of Decision
- Remedial Design
- Remedial Action
- Site Deletion

Figure 1: Grasse River, Reynolds, and GM



History of Grasse River Development

- 1898-1903: Power Canal Construction
- 1902: Pittsburgh Reduction Company constructs aluminum plant in Massena. In 1907, Pittsburgh Reduction Company changes its name to Aluminum Company of America (now Alcoa, Inc.)
- Early 1900s: Lower Grasse River excavated, deepened and widened to support the increased flows from the Powerhouse

History of St Lawrence River Development

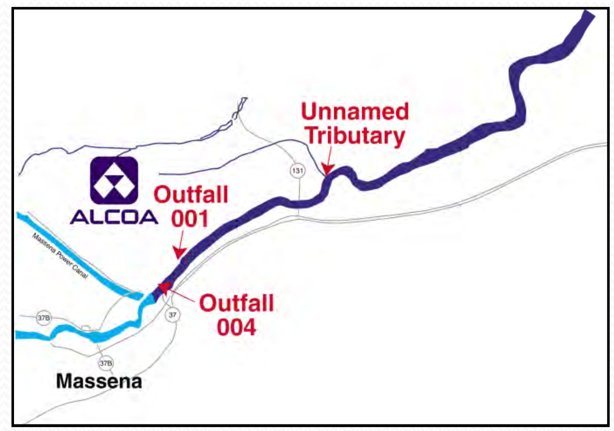
- 1954: Construction of the Eisenhower Locks System and the Moses-Saunders Power Dam (FDR Project), US & Canadian development project of the St. Lawrence River

- 1958: New York Power Authority purchased the Power Canal and Powerhouse and stopped their operation

- 1958: FDR Project started supplying hydroelectric power to Alcoa plant

Site History

- Alcoa discharged wastewater from the Alcoa Massena-West Plant containing oils and PCBs
- Waste was discharged into the lower Grasse River in three areas: Outfall 001, Outfall 004, and Unnamed Tributary
- Waste was also discharged into the Power Canal: Outfall 003

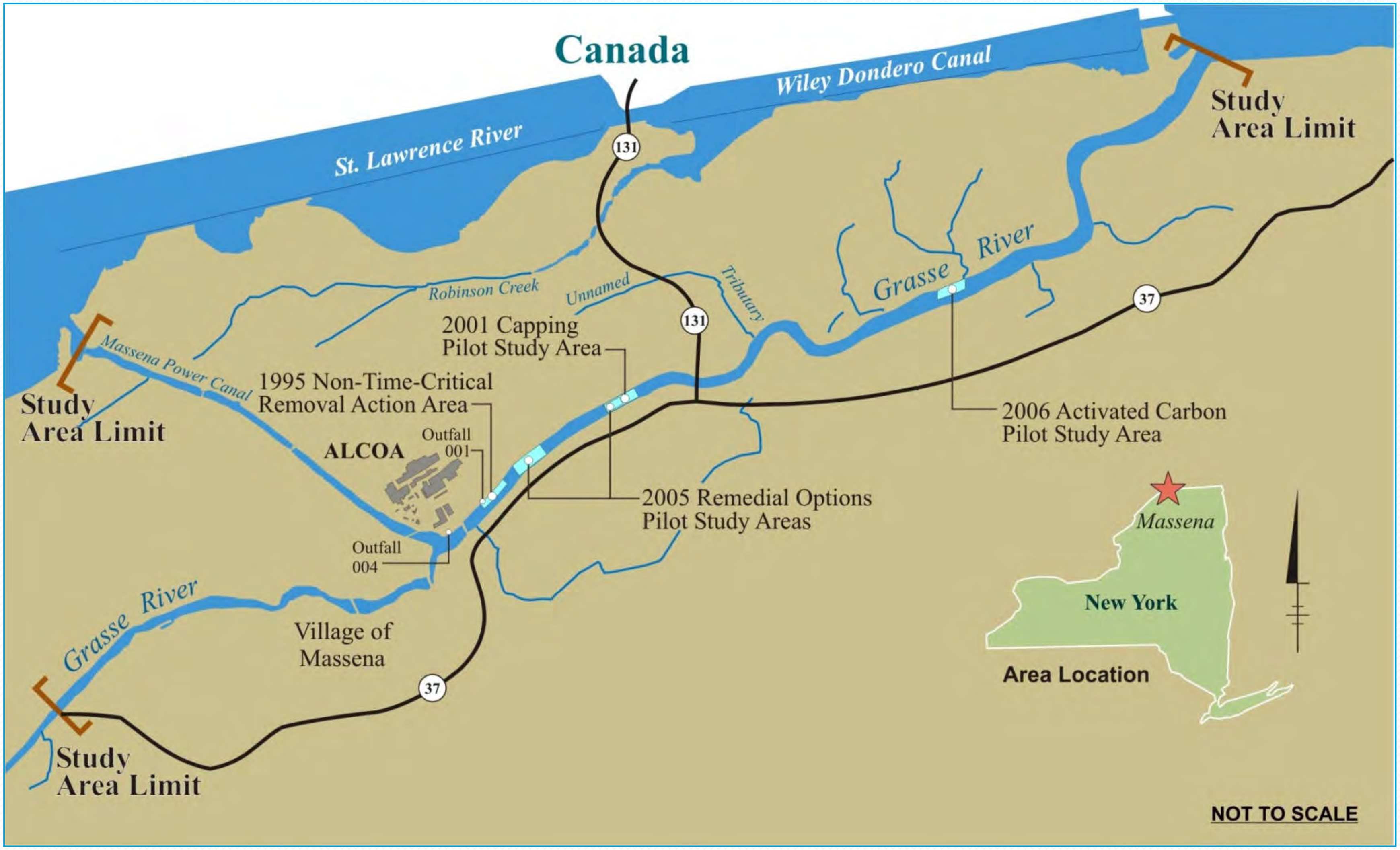


- Mid-1970s: Alcoa stops using oil containing PCBs
- Under the 1985 NYSDEC Order, Alcoa conducts remediation of the land based waste disposal areas, completed in 2001

Site History (cont'd)

- 1989: EPA issues an Administrative Order to Alcoa for the investigation of the Alcoa Study Area, development of cleanup alternatives, and design and implementation of a remedial action to be selected by EPA
- 1991: Alcoa initiated the River and Sediment Investigation (equivalent to remedial investigation)
- 1995: EPA amends the Administrative Order to require Alcoa to conduct Non-Time Critical Removal Action (NTCRA)
  - 3,000 cubic yards of sediment, boulders, and debris removed from Outfall 001 area

Initial Alcoa Study Area

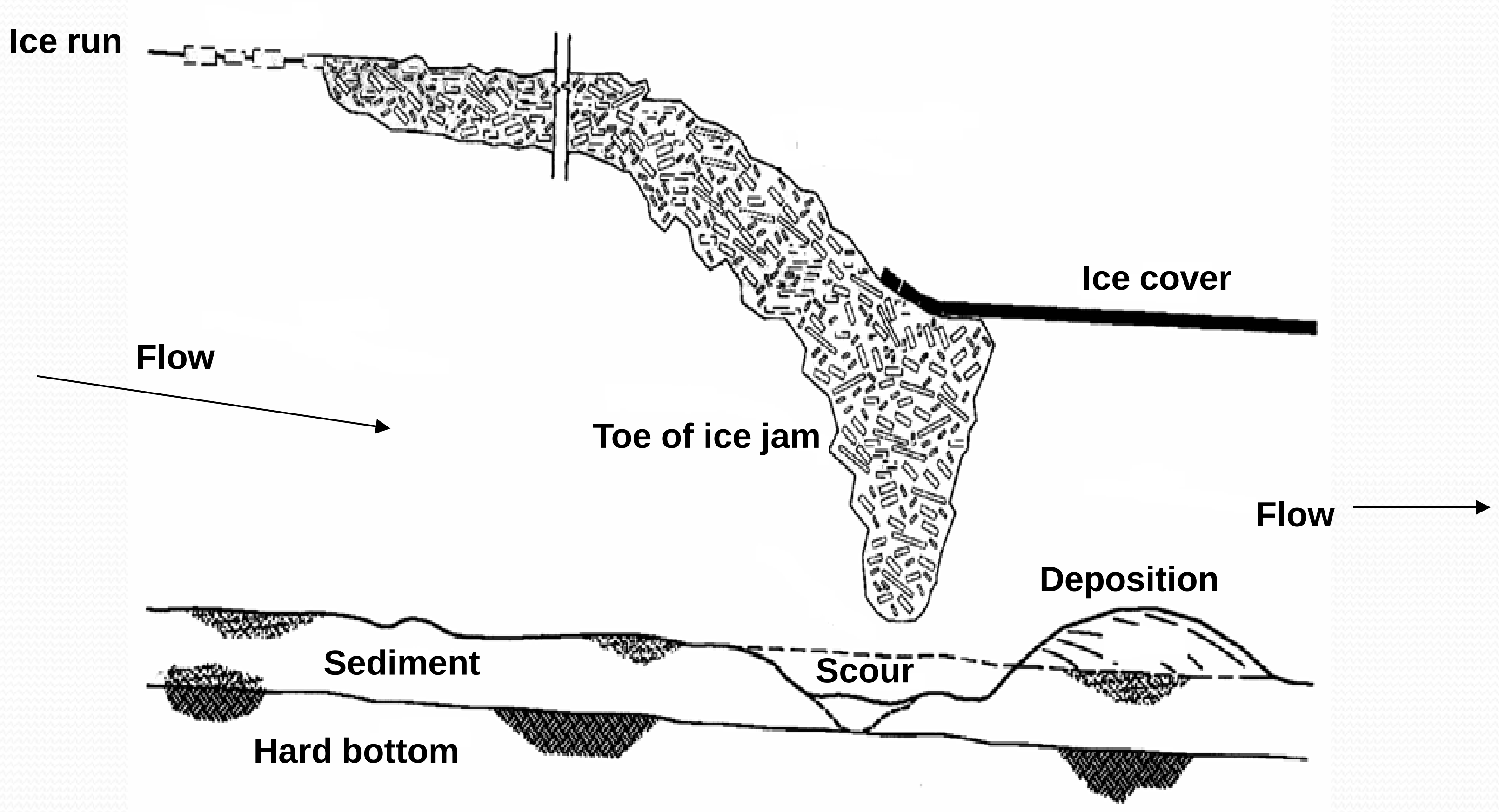


Site History (cont'd)

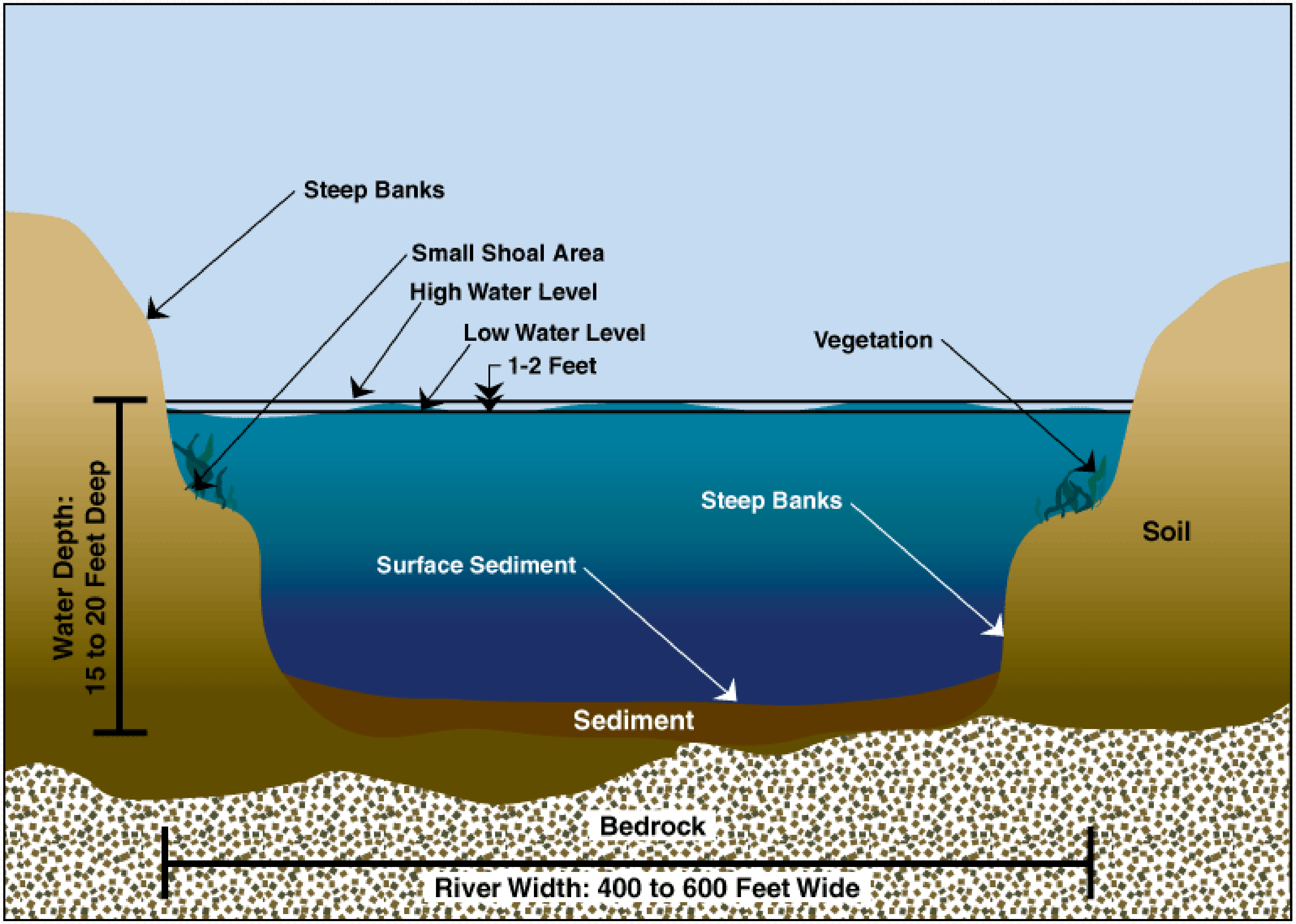
- From 1991 to 2010, numerous studies were conducted to define the extent of contamination and to develop the alternatives for cleanup
- Several pilot studies and demonstration projects of various technologies also conducted in the river
- During post implementation monitoring of the capping pilot study, "ice jam" event severe enough to scour sediment was discovered

March 2003 Ice Run Photo: Grasse River

Profile of Ice Jam



Grasse River Profile



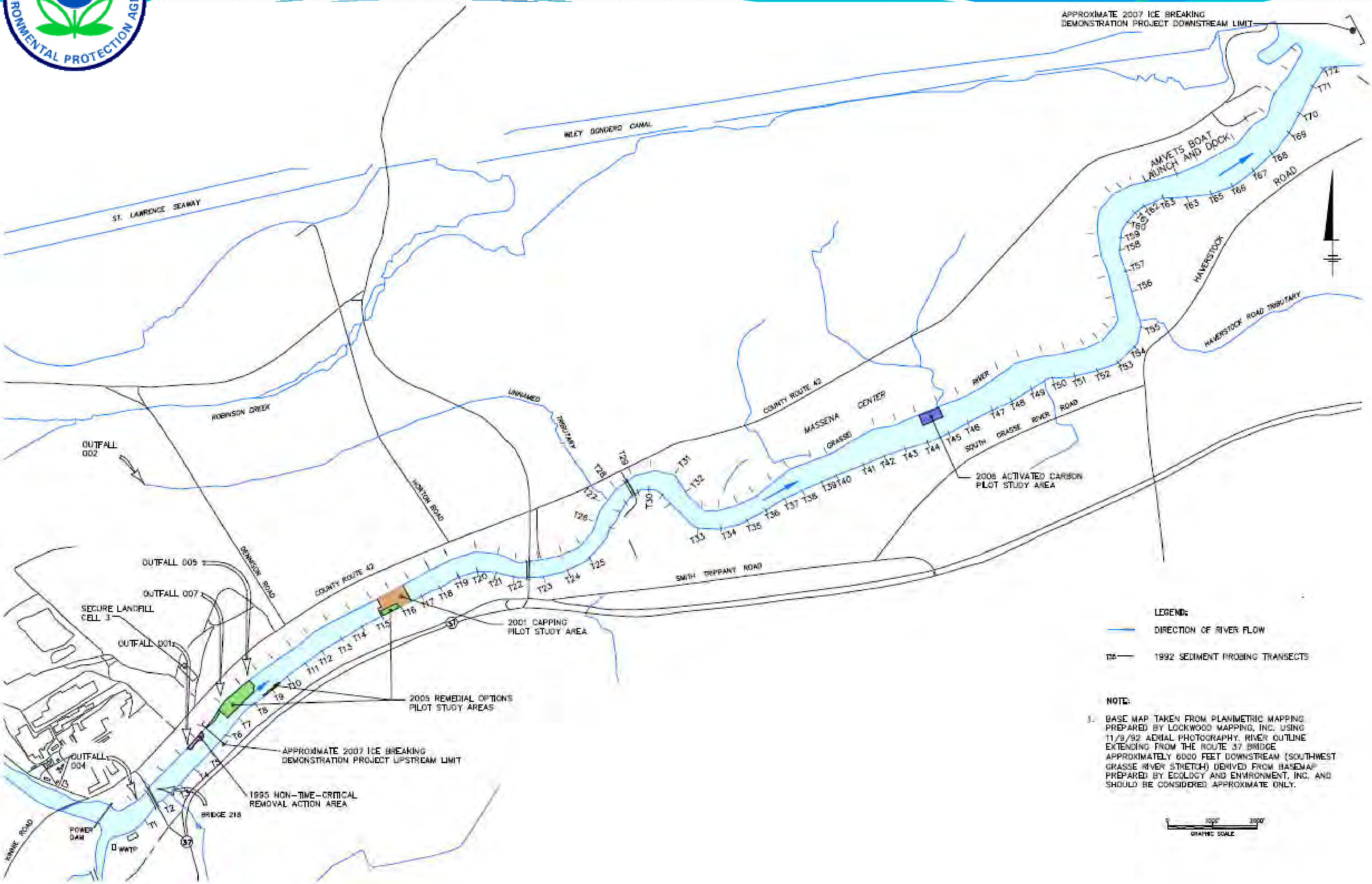
Grasse River Investigation Results

- PCBs are the contaminants of concern.
- Primary human health risk is from ingesting PCB-contaminated fish caught from the lower Grasse River.
- Ecological risk to aquatic organisms, fish, fish-eating birds and mammals is also unacceptable and driving remediation.
- Sediment in 7.2 mile stretch of the lower Grasse River (slow flowing) is contaminated with PCBs in the near shore, side slope and main channel areas.
- Sediment in the near shore and main channel is stable, except in the upper 2 miles beginning at the confluence with the Power Canal, where sediment is susceptible to scour during a severe ice jam event, even at depth (potential frequency of occurrence once every 8-10 years).

Grasse River Investigation Results (cont'd)

- Other than the upper 2 miles, surface sediments are the primary source of PCBs to the biota. PCB contamination is widespread.
- Highest PCB concentrations in the Grasse River sediment are typically found at depth in the main channel, near the hardpan, bedrock, or glacial till bottom (over dredging is not possible).
- Contamination in the near shore is generally within the top 12 to 18 inches of sediment.
- In the past 17 years, PCB levels in fish have decreased by over 90% for smallmouth bass and brown bullhead. The PCB levels in young-of-year spottail shiner have decreased by 55 to 60%. However, the fish are still contaminated and pose unacceptable risk.
- Decline observed in all three fish species is mostly attributable to source control by upland facility remediation, completed in 2001.

Grasse River Superfund Site



10 Alternatives Evaluated

Alternative 1	Alternative 2
• No Further Action • $0; 0 years construction time	• Monitored Natural Recovery • $3.4 million; 0 years
Alternative 3 • T1-T72 near shore cap • T1-T21 main channel armored cap • T21-T72 main channel cap • $114.4 million; 3 years	**Alternative 4** • T1-T21 near shore dredge/backfill to grade • T21-T72 near shore cap • T1-T21 main channel armored cap • T21-T72 main channel cap • $147 million; 3 years
Alternative 5 • T1-T72 near shore dredge PCBs ≥ 10 ppm and cap PCBs between 1 ppm and 10 ppm • T1-T21 main channel armored cap • T21-T72 main channel cap • $175 million; 4 years	**Alternative 6** • T1-T72 near shore dredge/backfill to grade • T1-T21 main channel armored cap • T21-T72 main channel cap • $243 million; 4 years

10 Alternatives Evaluated (cont'd)

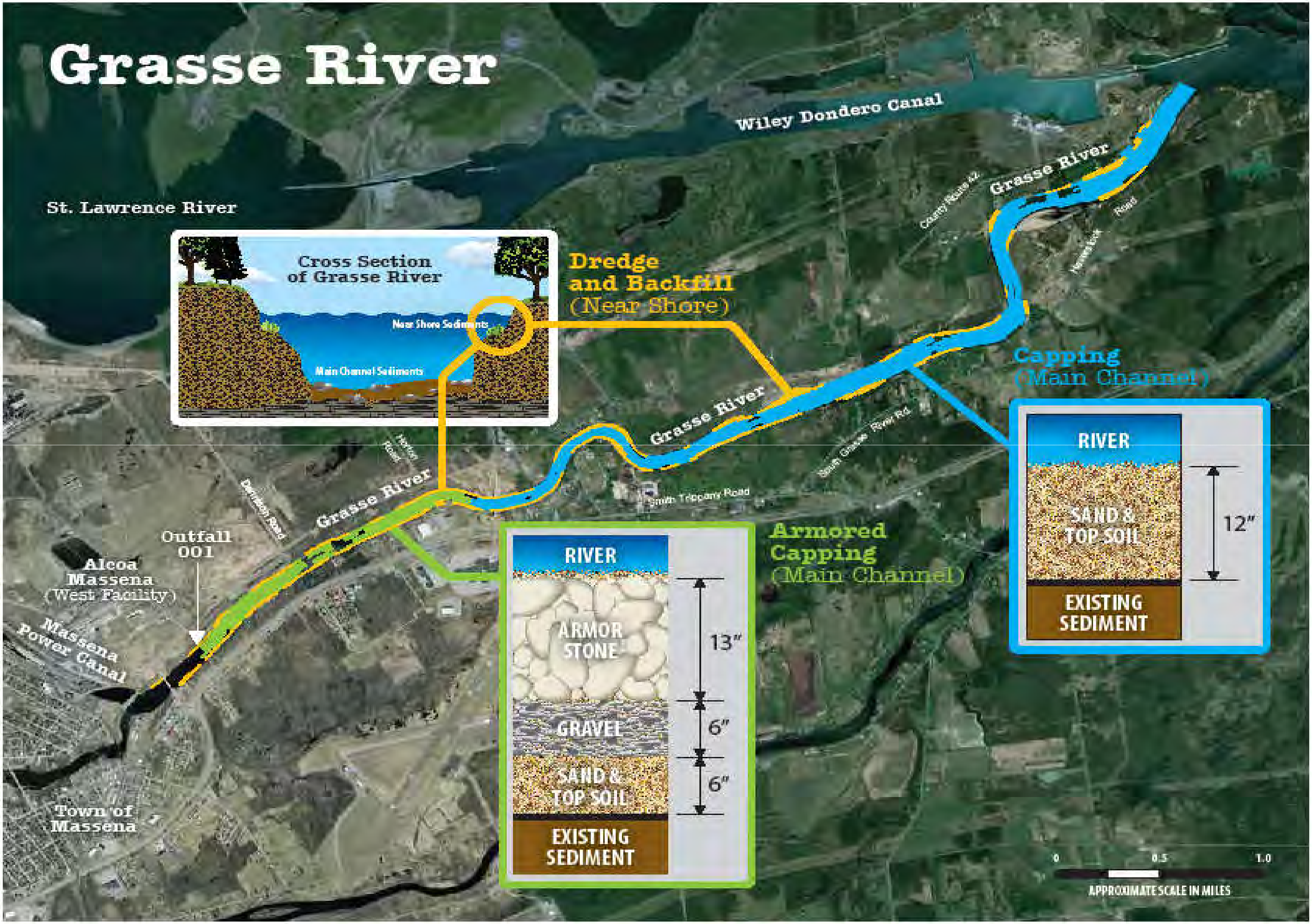
Alternative 7	Alternative 8
• T1-T72 near shore dredge/backfill to grade • T1-T19.5 select main channel dredging • T1-T21 main channel armored cap • T21-T72 main channel cap • $352 million; 5 years	• T1-T21 near shore dredge/backfill to grade • T21-T72 near shore cap • T1-T21 main channel dredge and armored cap residual • T21-T72 main channel cap • $388 million; 8 years
Alternative 9	**Alternative 10**
• T1-T72 near shore dredge/backfill to grade • T1-T46 select main channel dredging • T1-T21 main channel armored cap • T21-T72 main channel cap • $589 million; 7 years	• T1-T72 near shore dredge/backfill to grade • T1-T21 main channel dredge and armored cap residual • T21-T72 main channel dredge and cap residual • $1.274 billion; 18 years

Alternatives Evaluation Criteria

"NCP Nine Criteria"

- Overall Protection of Human Health and the Environment
- Compliance with Applicable or Relevant and Appropriate Requirements
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, and Volume
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance /Tribal Acceptance
- Community Acceptance

Alternative 6



Proposed Remedy

EPA and State recommend Alternative 6

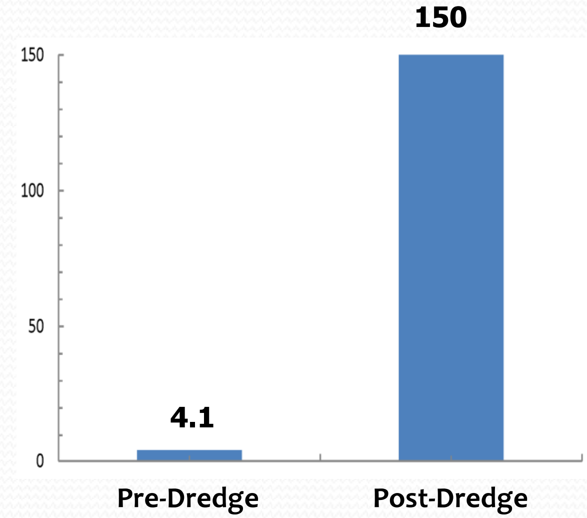
- Dredge near shore sediment PCB concentrations ≥ 1 parts per million (ppm), followed by backfill to grade (approx. 109,000 cubic yards)
- Place main channel armored cap over T1-T21 main channel sediments where either the segment length weighted average (SLWA) or the maximum surface sediment PCB concentrations ≥ 1 ppm (approx. 59 acres)
- Place main channel cap over T21-T72 main channel sediments where the maximum surface sediment PCB concentrations ≥ 1 ppm (approx. 225 acres)
- Dewater dredged sediment and dispose in the on-site permitted landfill
- Reconstruct habitat impacted by remedial action
- Long-term monitoring and maintenance

Some Common Questions

- "Why not dredge in main channel too?"
- "Can armored cap work?"
- "Why dredge near shore if capping is just as effective?"

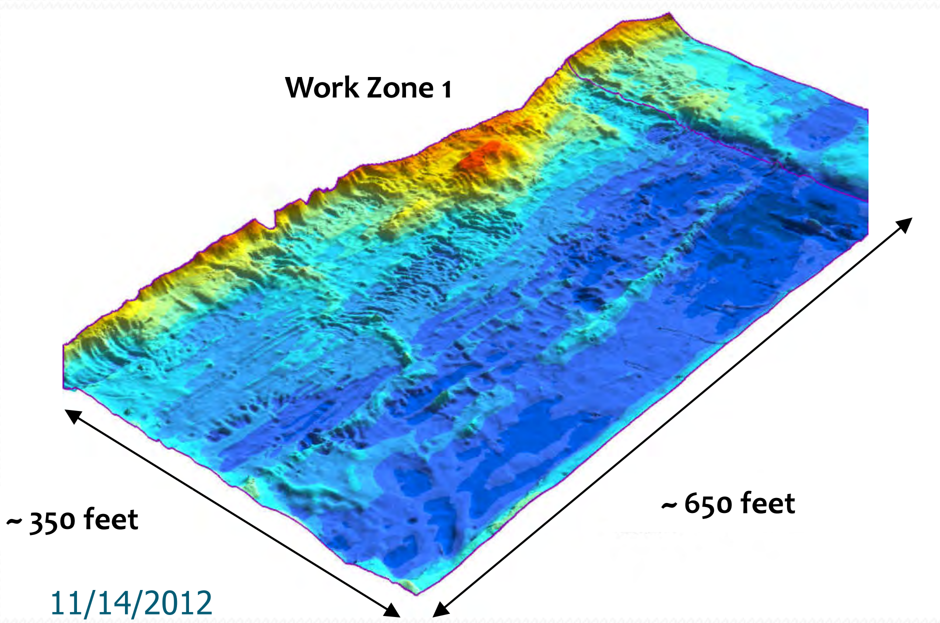
“Why not dredge in Main Channel too?”

- **Site-specific conditions not conducive to dredging main channel. Dredging main channel results in high residual concentration still requiring capping after extensive dredging.**
  - Most highly contaminated sediment buried towards the bottom of sediment column
  - Irregular, uneven river bottom
  - Boulders and rock debris



Average ROPS Work Zone 1

Sediment (0-3 inches) PCB Concentrations (mg/kg)



"Can armored cap work?"

- Armored cap designed and implemented during 2005 ROPS
- Models used to design armored cap address turbulent flow, velocity, and ice thickness. Designed to protect against scouring forces created under the ice jam toe
- In-river armored cap has been used at contaminated sediment sites to address erosional and scouring forces for which sand/topsoil caps are insufficient

Armored Cap

Photo of Armored Cap 2005 ROPS

Photo of Armored Capped Area 2009

"Why dredge near shore, if capping is just as effective?"

- **Capping the Grasse River near shore is not "as good" as dredging and backfilling to grade**
- **Unlike main channel, near shore can be successfully dredged and not require a cap after dredging**
- **Dredging near shore will take out some of the side-slope, which has been difficult to cap due to its steepness**
- **Near shore is backfilled to grade after dredging to allow for habitat re-establishment and species use**

Grasse River Superfund Site
Proposed Plan Public Comment

- EPA relies on public involvement to ensure that input from the community is considered during selection of the cleanup plan.
- EPA's final decision on the cleanup will be described in a Record of Decision which will be issued after all comments received during the public comment period have been reviewed.
- The comments and EPA's responses will be included with the Record of Decision.

Grasse River Superfund Site Public Comment (cont'd)

- **EPA will accept written comments on the Proposed Plan through November 29, 2012.**
- How to submit comments:
  - Postal mail
  - E-mail
  - Fax
- Please address written comments to:

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Grasse River Superfund Site

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- National Oceanic and Atmospheric Administration
- US Fish and Wildlife
- Grasse River Community Advisory Panel
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- Alcoa Contractors (Dr. George Ashton, Anchor QEA, ARCADIS, and CDM Smith)
- Alcoa

Grasse River Superfund Site
Q and A

Panelists

- Young S Chang - Remedial Project Manager
- Dougles Fischer - Assistant Regional Counsel
- Dave Kluesner - Community Involvement Coordinator
- Pete Mannino - Western New York Remediation Section Chief
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