Superfund Decision process

& the Fox River Superfund Site

James Hahnenberg

Lawrence University
Environmental Studies Seminar
October 19, 2006

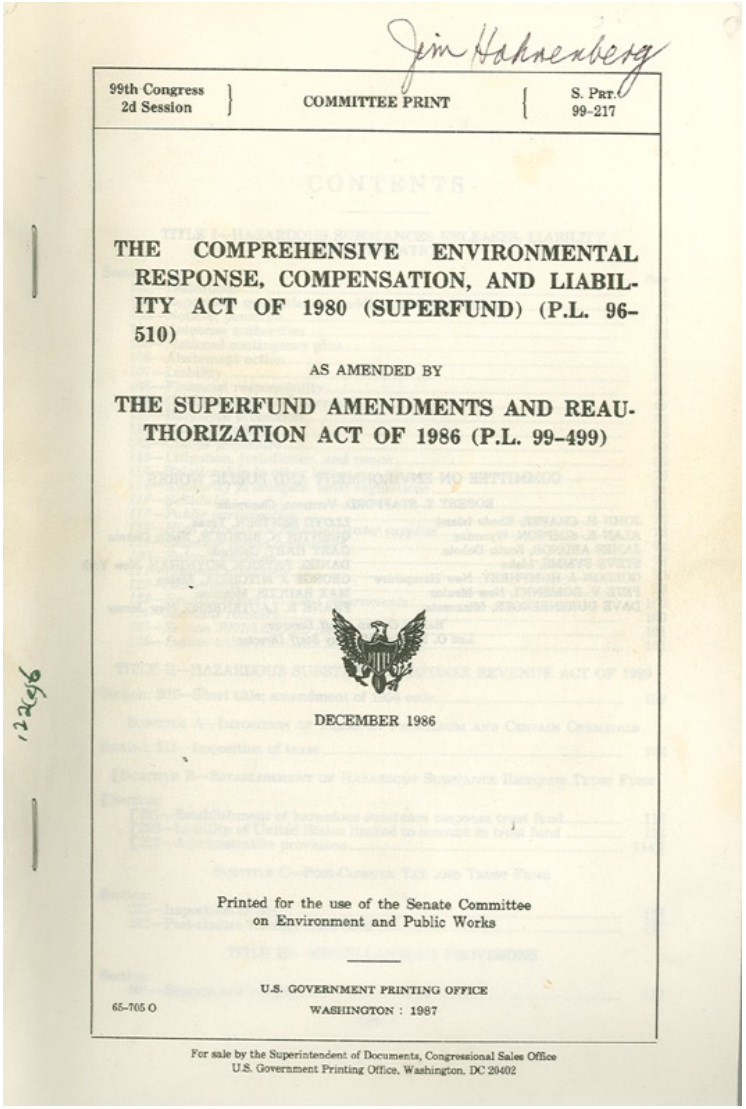
Lets talk...

1. Superfund

2. Fox River
   a. The problem
   b. Investigations & evaluations
   c. Decisions
   d. Cleanup

3. Legal stuff

CERCLA ("Superfund")



Jim Hahnenberg

99th Congress 2d Session | COMMITTEE PRINT | S. PRT. 99-217

THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (SUPERFUND) (P.L. 96-510)

AS AMENDED BY

THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (P.L. 99-499)

DECEMBER 1986

Printed for the use of the Senate Committee on Environment and Public Works

U.S. GOVERNMENT PRINTING OFFICE
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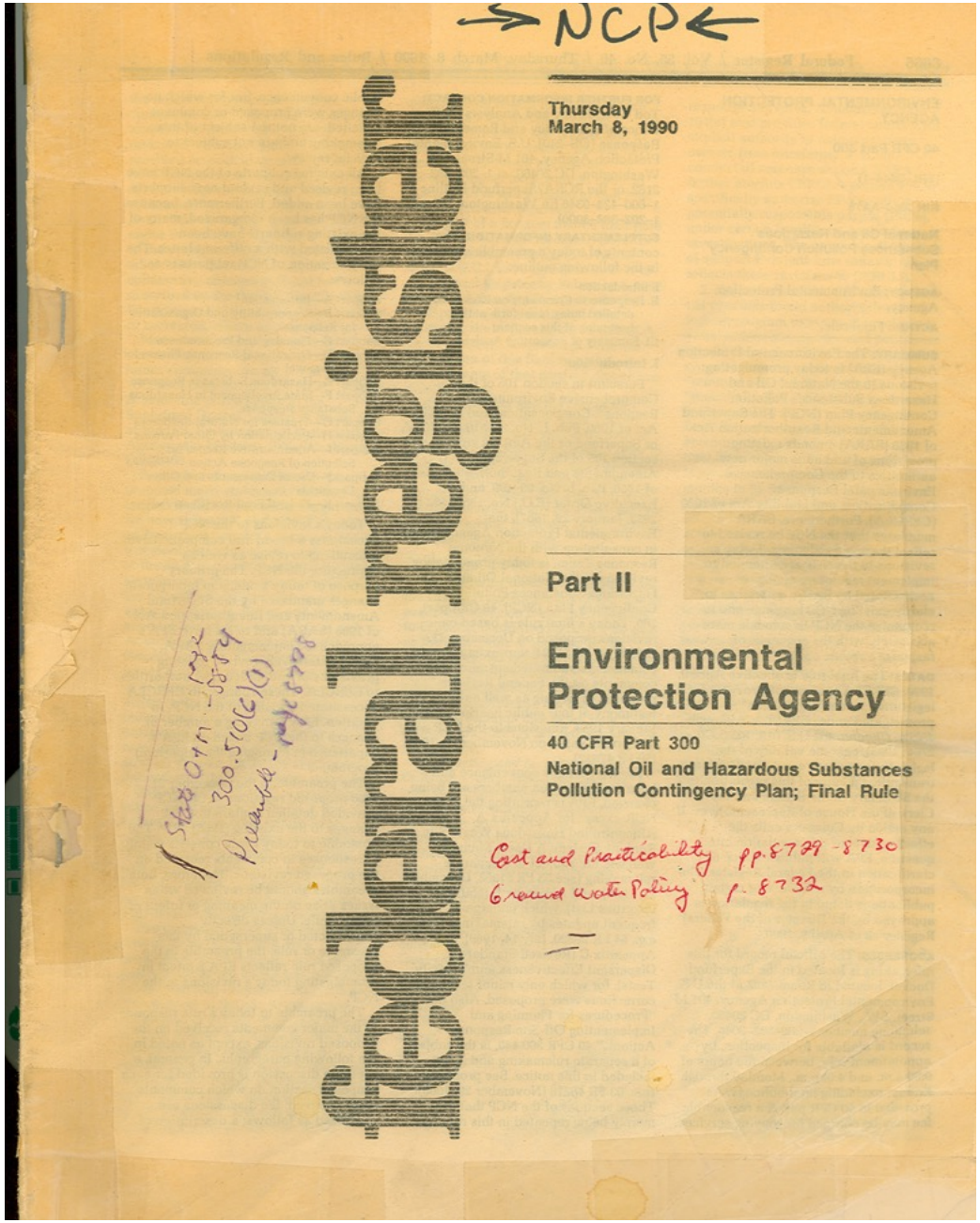
U.S. Government Printing Office, Washington, DC 20402

National Contingency Plan



→ NCP ←

federal register

Thursday
March 8, 1990

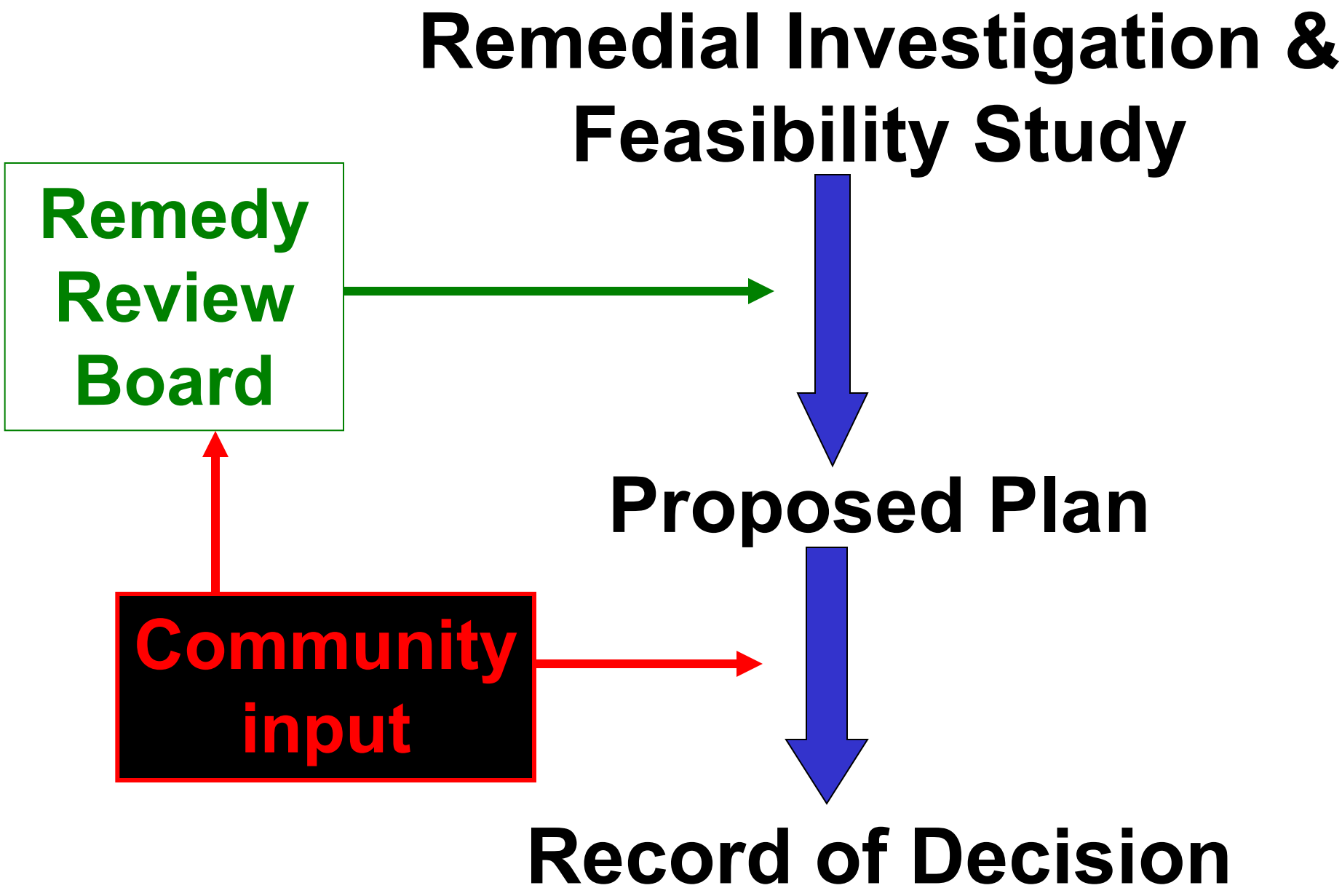
Part II

Environmental Protection Agency

40 CFR Part 300
National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule

Cost and Practicability pp. 8739-8730
Ground water Policy p. 8732

	"SUPERFUND"	Natural Resource Damages
Goal	Cleanup	Restoration/ Compensation
Focus	Public health, welfare & environment	Natural Resources
Funding	EPA or Responsible Parties	Responsible Parties
Federal lead	U.S. EPA	U. S. Fish & Wildlife Service


Remedial Investigation &
Feasibility Study
Remedy
Review
Board
Proposed Plan
Community
input
Record of Decision

Superfund process
Evaluations

1. **Remedial Investigation & Risk Assessment: defines problem & risks**

2. **Feasibility Study: evaluates cleanup alternatives (“9 criteria”)**

Superfund
Decision process

3. **Proposed Plan**
   a. Remedy proposal by Agencies
   b. Public comment – 30 days+

4. **Record of Decision ("ROD")**
   a. Decision basis & description
   b. Responds to public comments
   c. Administrative Record

Feasibility Study

9 Criteria

Threshold Criteria

1. **Protection of human health and the environment**

2. **Compliance with Applicable or Relevant and Appropriate Requirements ("ARARs")**

Feasibility Study

9 Criteria

Balancing Criteria

3. Implementability
4. Long-term effectiveness
5. Short-term effectiveness
6. Treatment preference
7. Cost effectiveness

Feasibility Study

9 Criteria

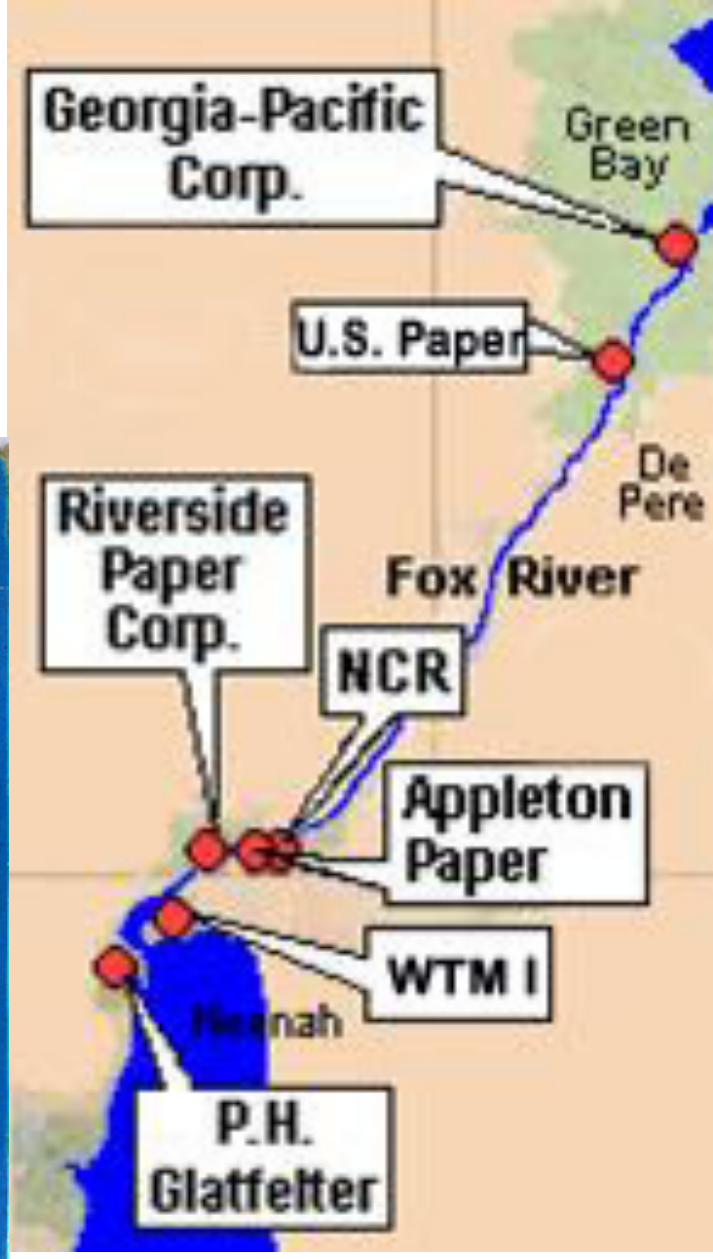
Modifying Criteria

8. **State acceptance**

9. **Community acceptance**

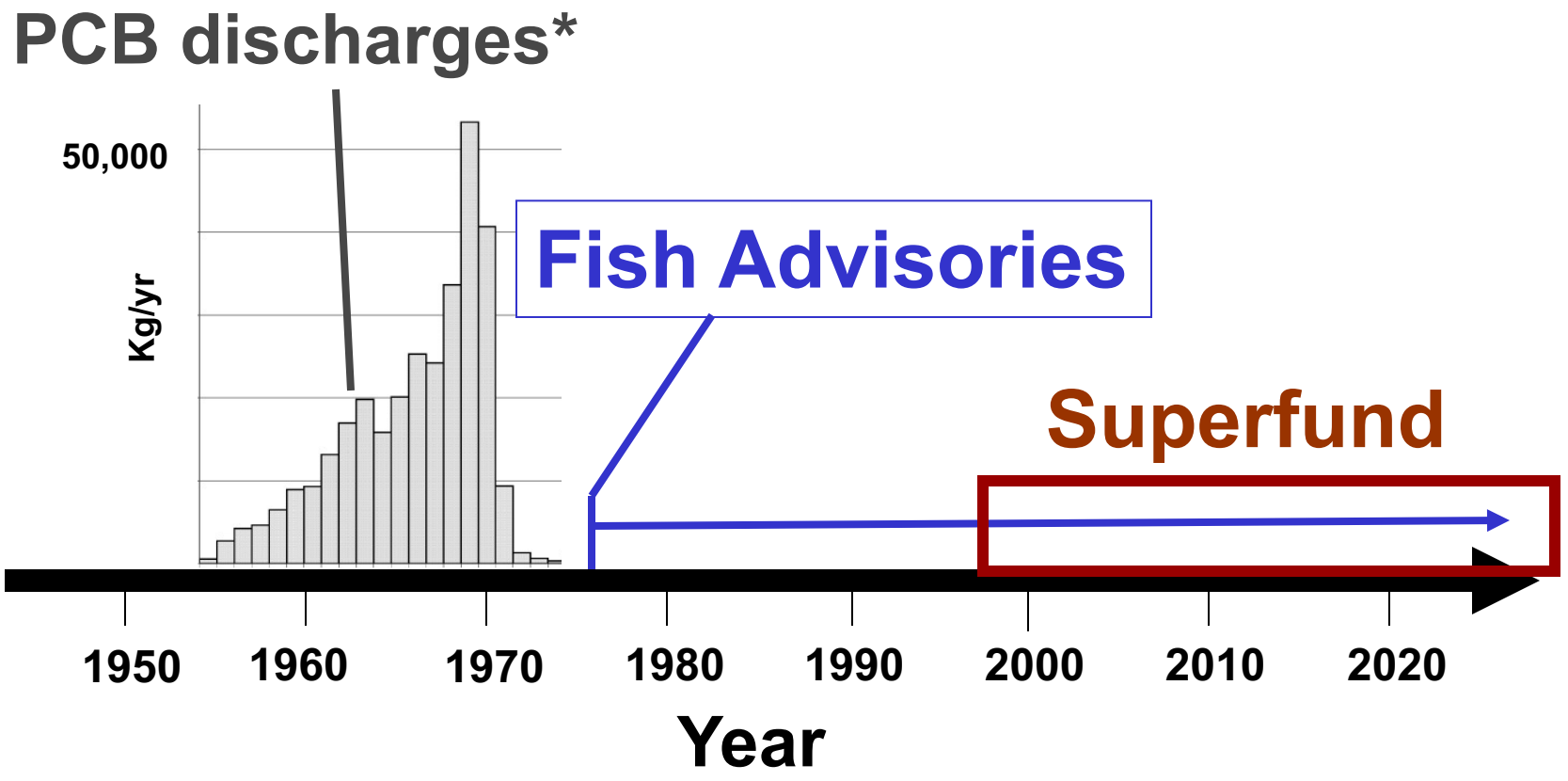
Fox River & Green Bay Superfund Site

PCBs: from carbonless copy paper production



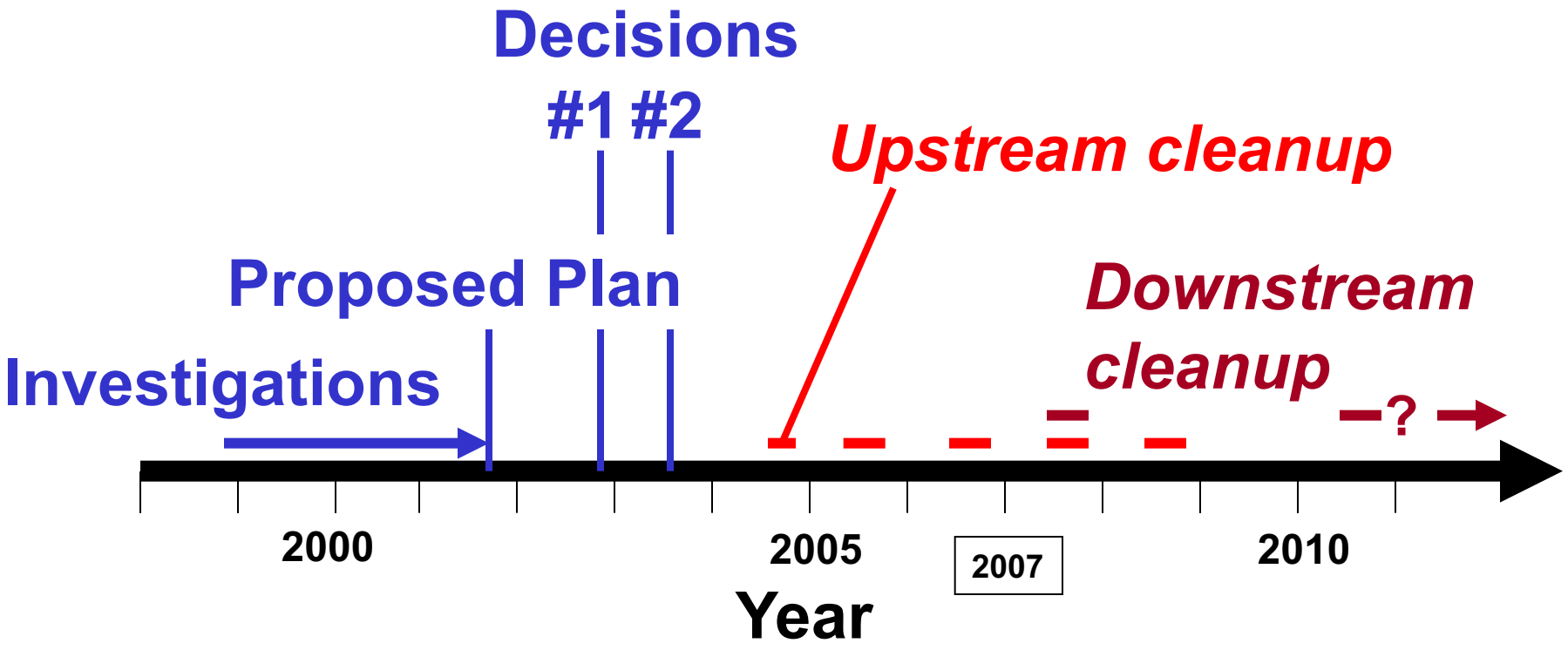
Modified from Green Bay Press Gazette

Fox River timeline



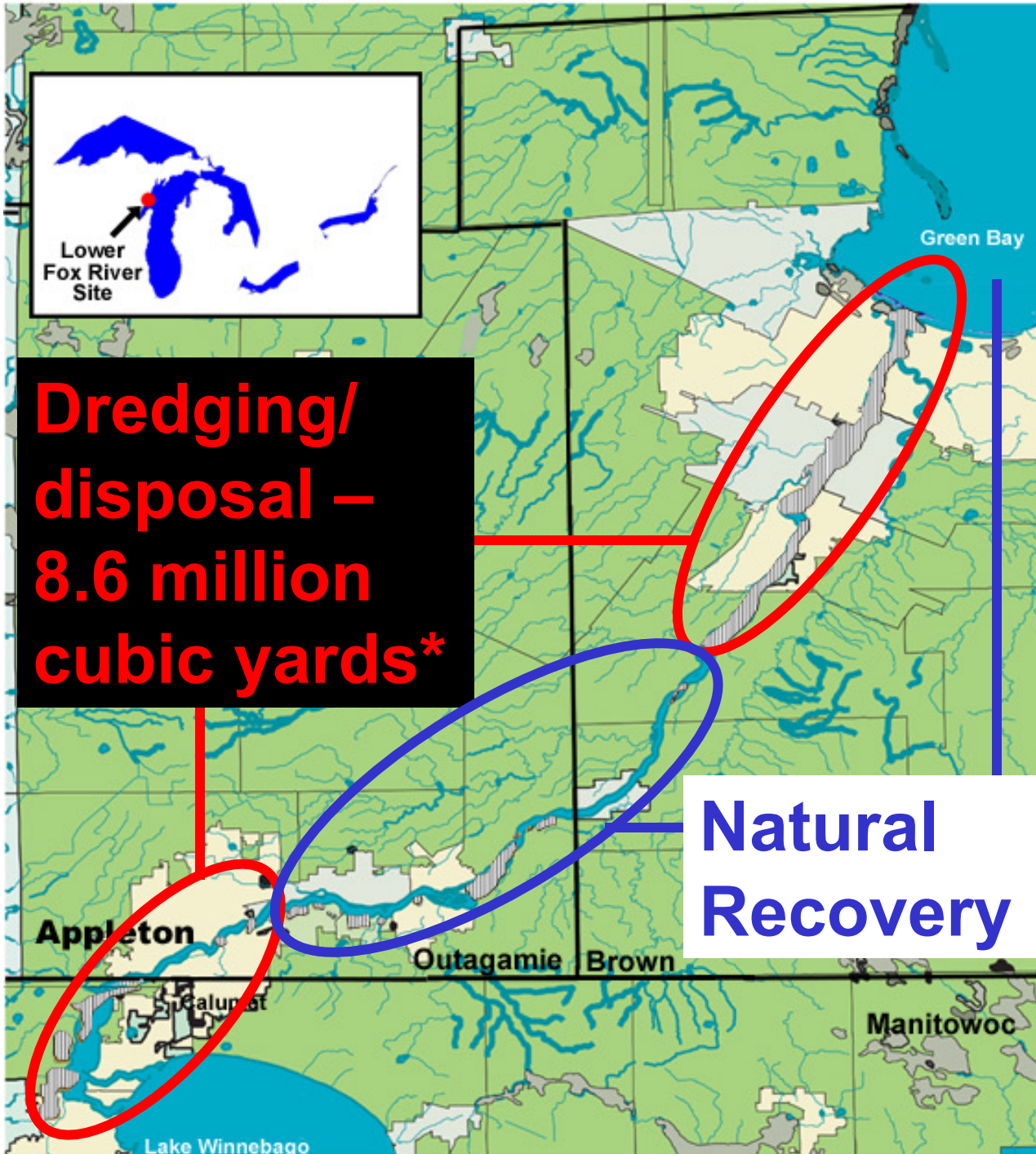
* From: WDNR, 1999, Technical Memorandum 2d (Figure 9).

Fox River Superfund timeline



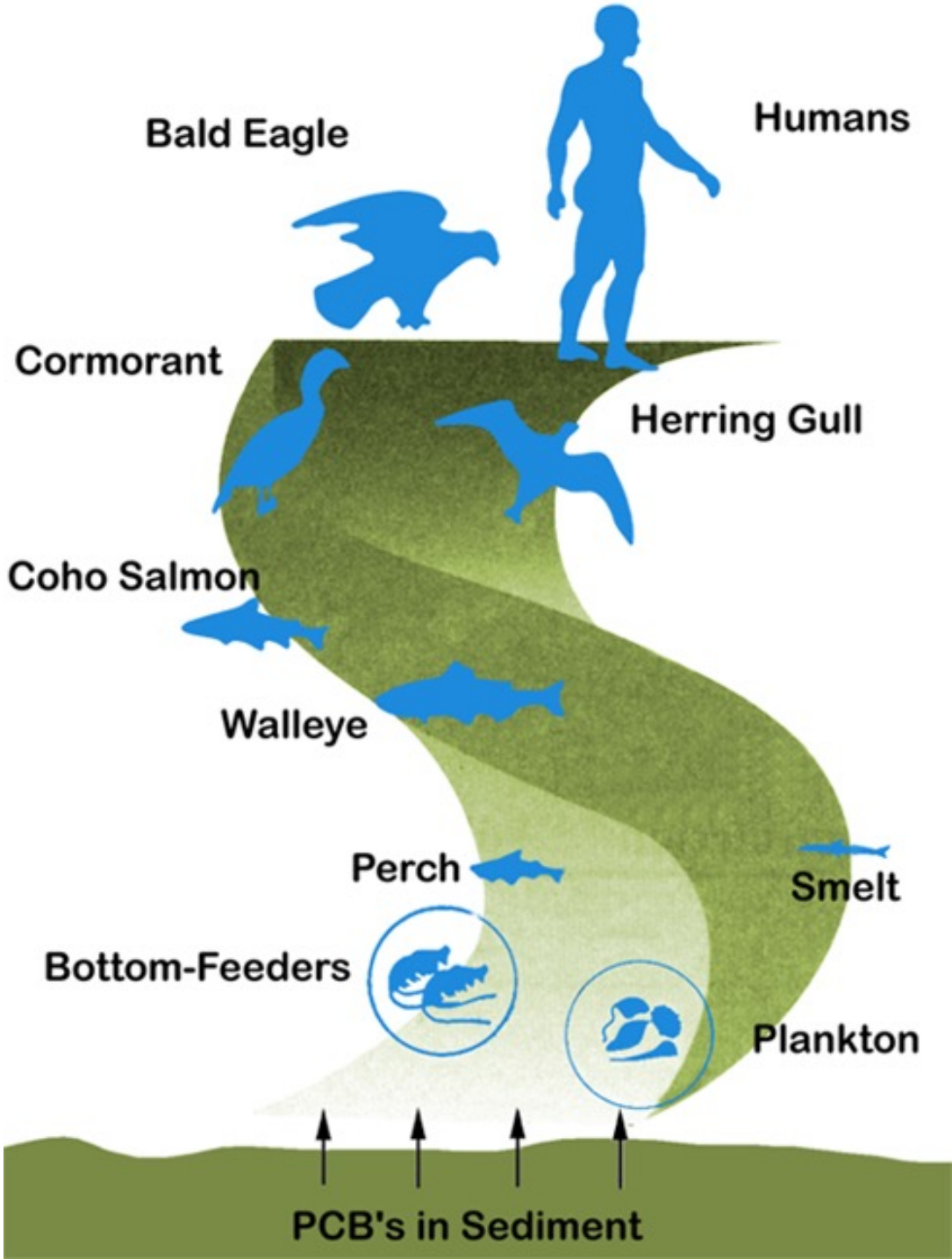
Cleanup Decisions

Total cost: $715 million*

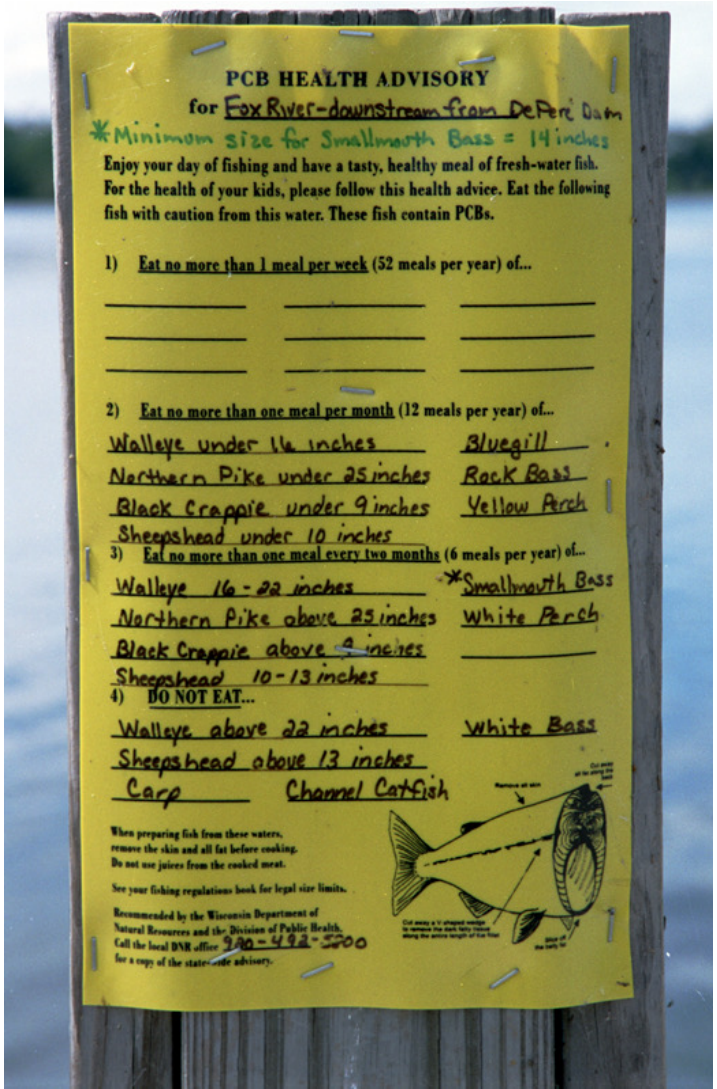


*** Original estimates were $400 million and 7.3 million cubic yards**

PCBs can get into your body



PCB Fish Consumption Advisories



Risk Assessment
(part of Remedial Investigation)

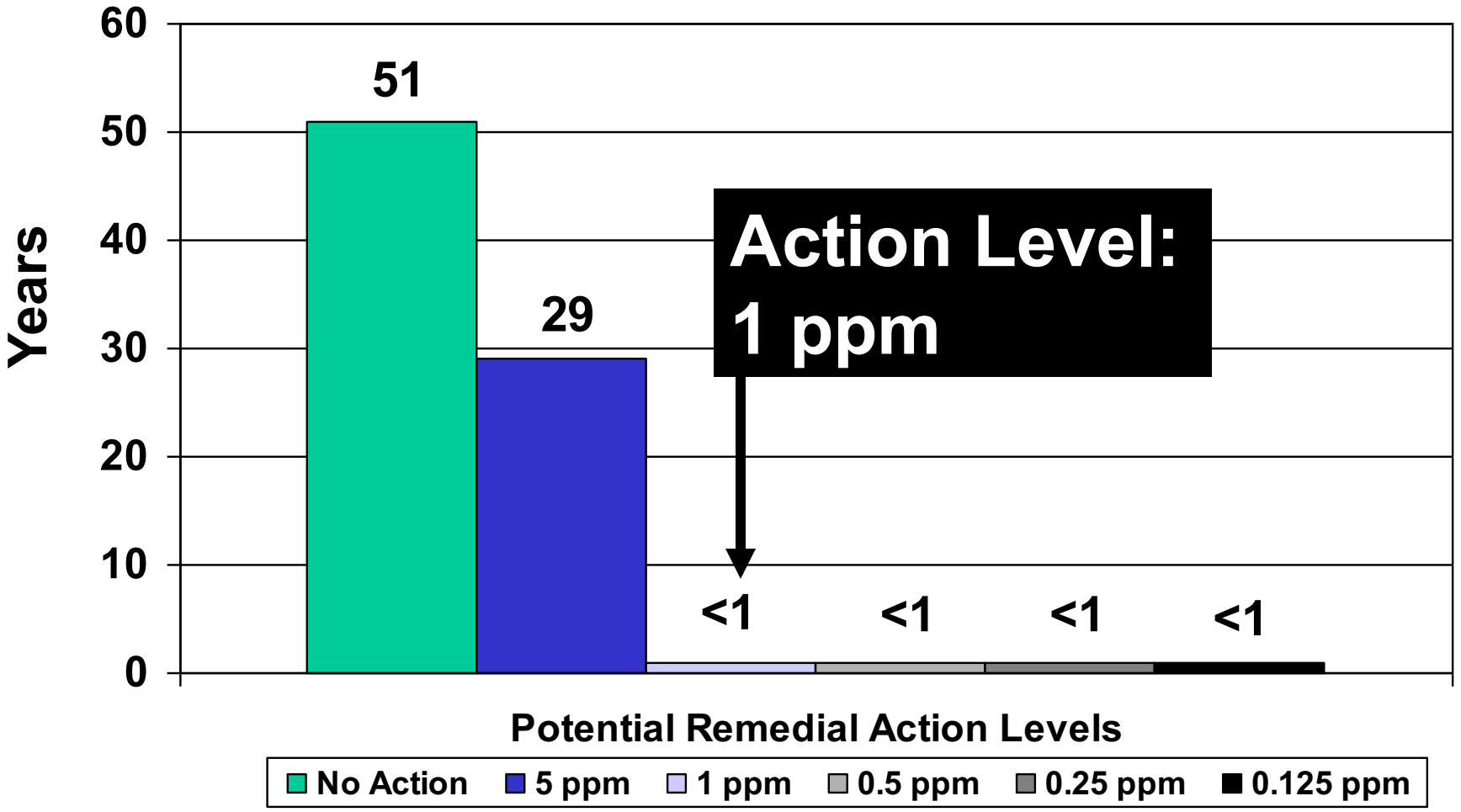
1. Current risks to humans and wildlife

2. Computer modeling (sediment sites)
   a. Estimates when fish can be safely consumed
   b. What are “safe” concentrations? (cleanup level)

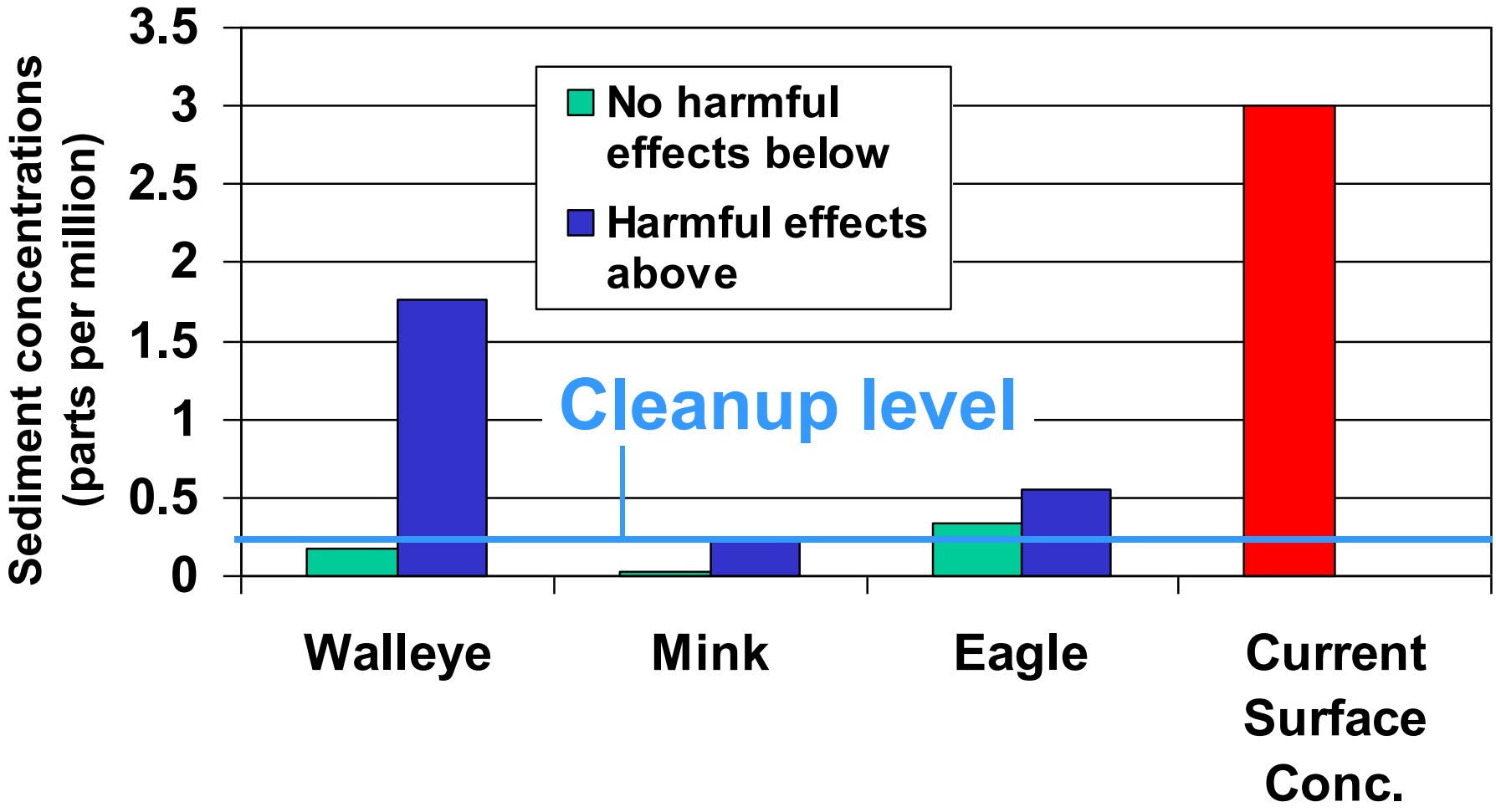
Current human health risks from fish consumption

	Current risks	"Safe" levels	
		WDNR	EPA
Cancer frequency	1 in 1000	Fewer than 1 in 100,000	Fewer than 1 in 10,000
Non-cancer (Hazard Indices)	50-70	Less than 1	Less than 1

Action level & time to Acceptable fish tissue levels 6 upstream miles



Ecological risks



* Fry growth & mortality for Walleye; reproduction and kit survival for mink; hatching success for eagles

Do alternatives meet the 9 Criteria? (OUs 1, 3, & 4)

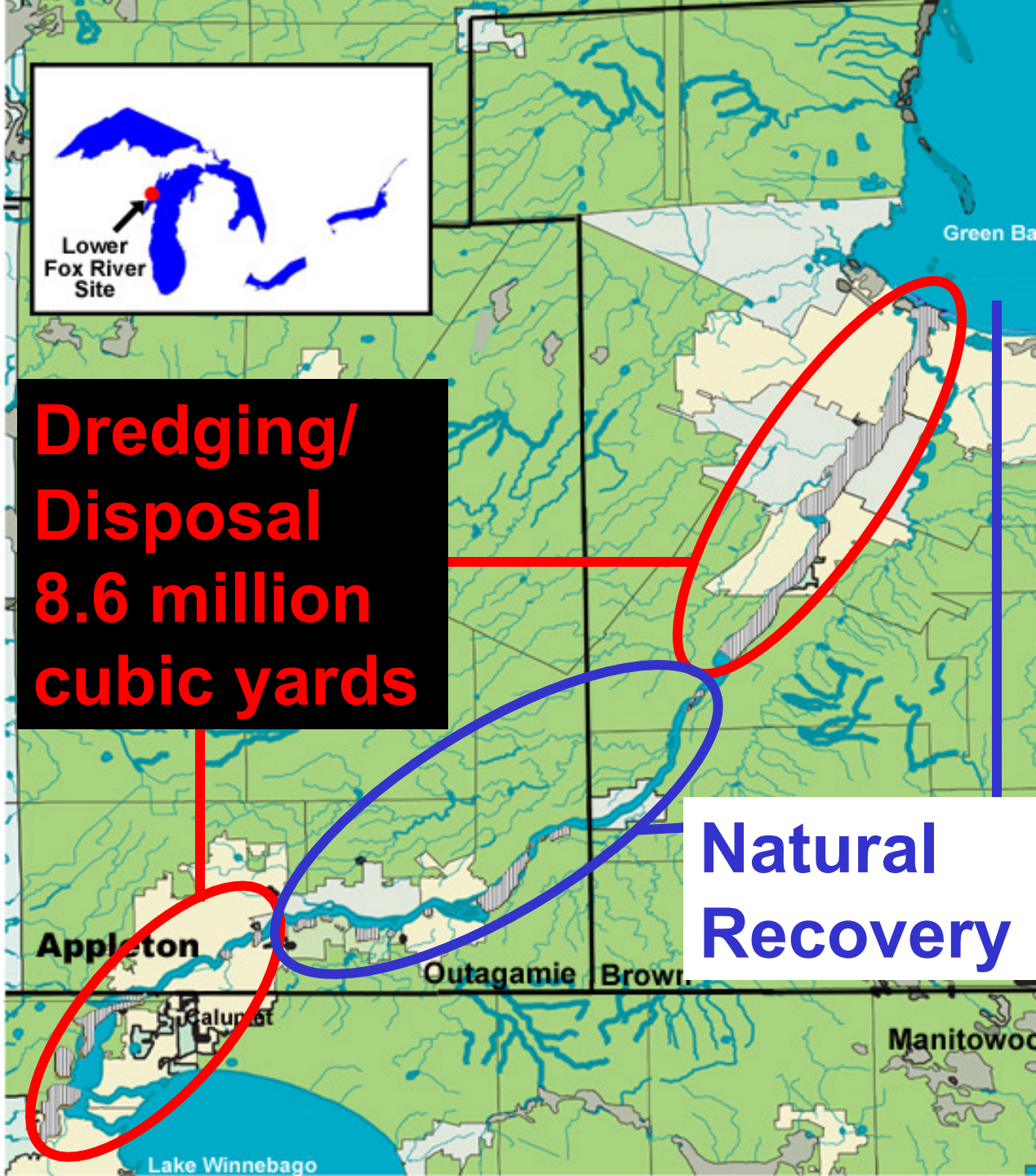
Criteria	No Action	Monitored Natural Recovery	Dredge & off-site disposal	Dredge & on-site disposal	Dredge & thermal treatment	Capping
Overall protection	No	No	Yes	Yes	Yes	Yes
ARARs	No	No	Yes	Yes	Yes	Yes
Long-term	No	No	Yes	Yes	Yes	Yes
Short-term	No	No	Yes	Yes	Yes	Yes
Reduction of toxicity, etc.	No	No	Yes	Yes	Yes	Yes
Implementability	Yes	Yes	Yes	Yes	Yes	Yes
Cost (in millions)	$4.5	$9.9	$169-$661	$505	$750	$357
Agency acceptance	EPA & WDNR agrees with Proposed Alternative					
Community Acceptance	Evaluated after public comment period					

Remedy Decisions

Cost: $640 million

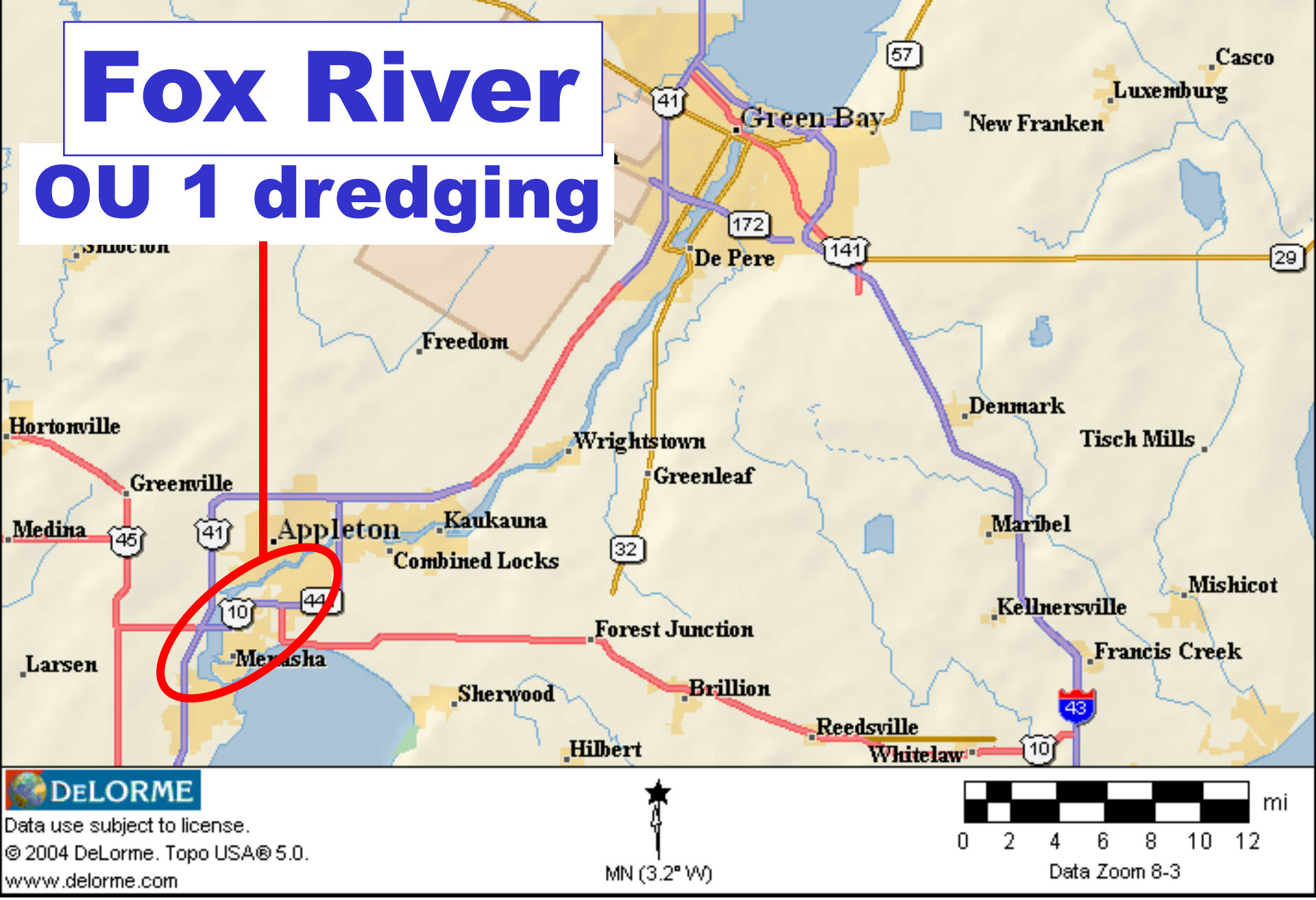
(original estimate: $400 million)

….considering modifying



Fox River

OU 1 dredging



THE POST-CRESCENT
www.postcrescent.com
SERVING WISCONSIN'S FOX RIVER VALLEY SINCE 1853

Fox River cleanup to begin in 2004

Limited scope of PCB effort defended

By Ed Culhane
Post-Crescent staff writer

Government managers of the Fox River PCB cleanup said critics of their decision to issue a partial decision Tuesday have likely misunderstood their motives.

Even though the Record of Decision, or ROD, only covers part of the river, government regulators say the cleanup will begin in 2004.

Though environmental groups contend the current approach is not aggressive enough, Tom Skinner, Region 5 director of the U.S. Environmental Protection Agency, said the idea is to speed the cleanup, not slow it down.

"Our foot is on the accelerator, and it is not coming off," Skinner said. "This should not be taken as an indicator that we are slowing down. We need to make sure the problem gets cleaned up and that the river is safe for folks."

The partial ROD available for public inspection is the final cleanup plan for 26 of the 39-mile river downstream from the Menasha dam to the dam at Little Rapids in Brown County, roughly halfway between Kaukauna and De Pere. It calls for several area paper companies to spend an estimated $76.1 million dredging PCB-contaminated sediments in Little Lake Butte des Morts, a 6-mile-long widening of the Fox River between the dam at Menasha and the first Appleton dam, and monitoring PCB levels in the less-contaminated stretch between Appleton and Little Rapids.

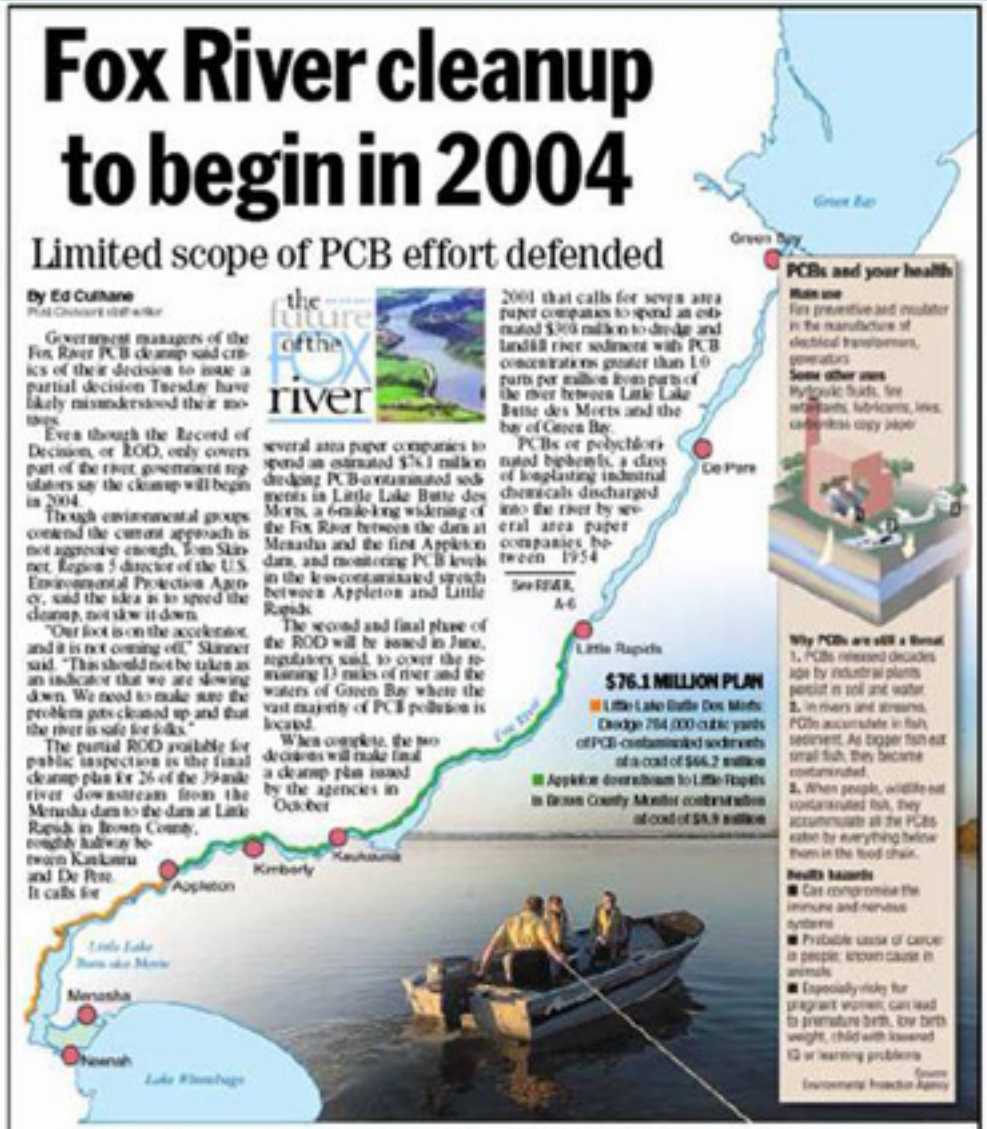
the future of the FOX river

The second and final phase of the ROD will be issued in June, regulatory said, to cover the remaining 13 miles of river and the waters of Green Bay where the vast majority of PCB pollution is located.

When complete, the two decisions will make final a cleanup plan issued by the agencies in October 2001 that calls for seven area paper companies to spend an estimated $300 million to dredge and landfill river sediment with PCB concentrations greater than 1.0 parts per million from parts of the river between Little Lake Butte des Morts and the bay of Green Bay.

PCBs or polychlorinated biphenyls, a class of longlasting industrial chemicals discharged into the river by several area paper companies between 1954

See FIXER, A-6



INSIDE more coverage
PLAN'S FULL TEXT Where to see it / A-6
INDUSTRY REACTS Effects debated / A-7
FOX RIVER TIMELINE History of cleanup / A-7

Fast start (upstream)

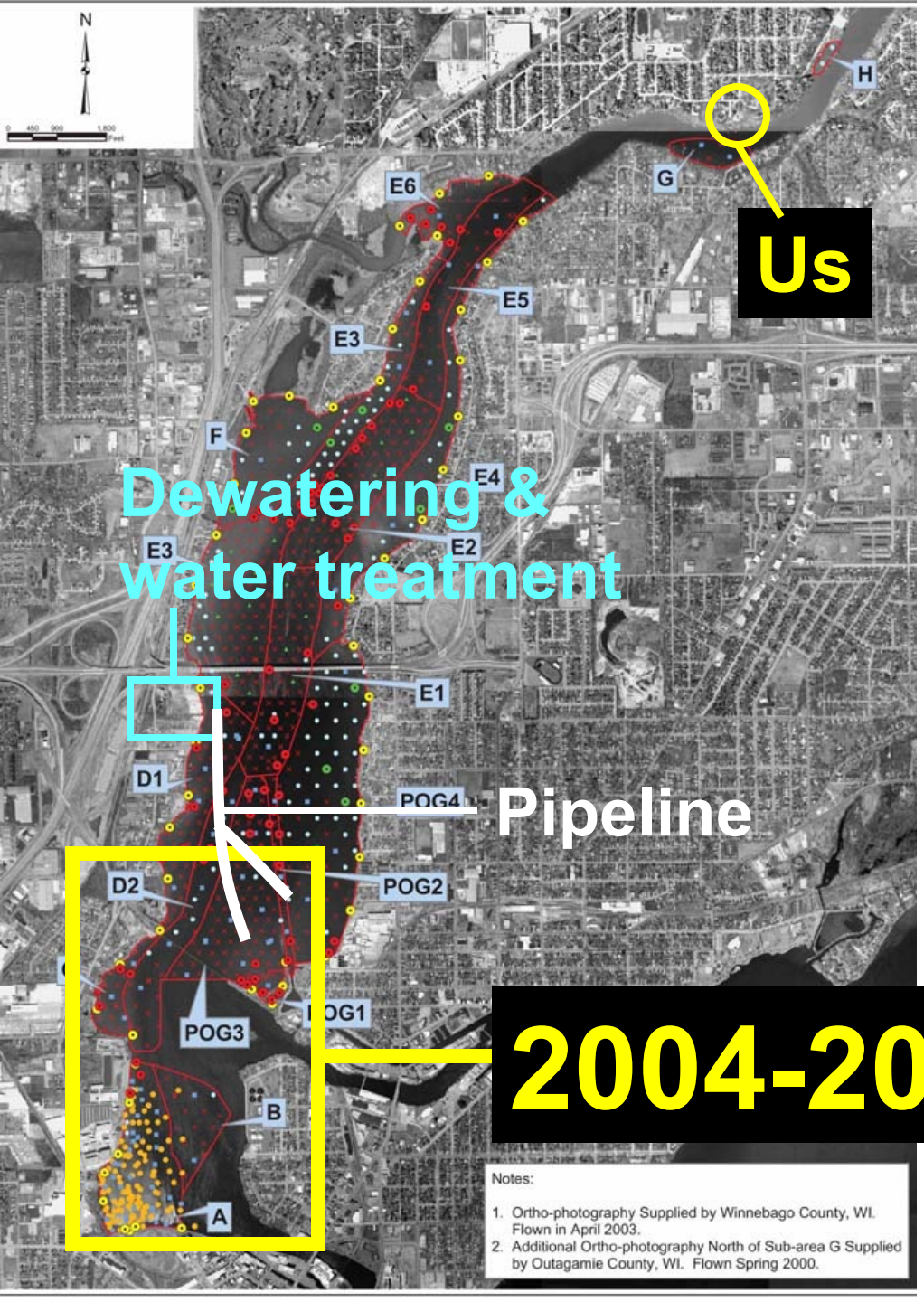
2001

2002 — Decision

2003 — Design begins

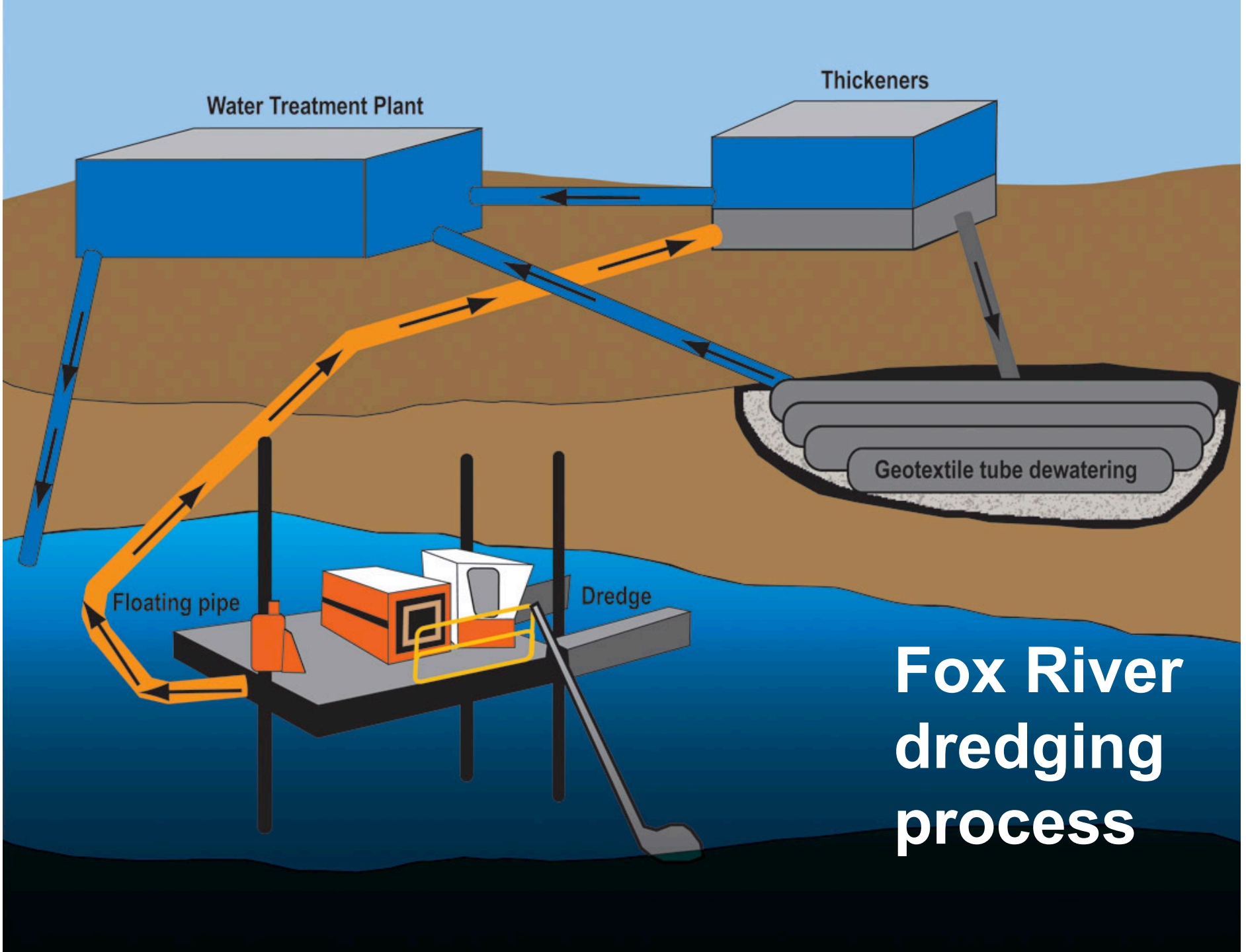
2004 — Consent Decree Contract

2005 — Work begins



OU 1 dredging

1. Dredge sediments (1,000,000 cubic yards)
2. Dewater sediment
3. Treat dredge water
4. Dispose at landfill


Water Treatment Plant
Thickeners
Geotextile tube dewatering
Floating pipe
Dredge
Fox River dredging process

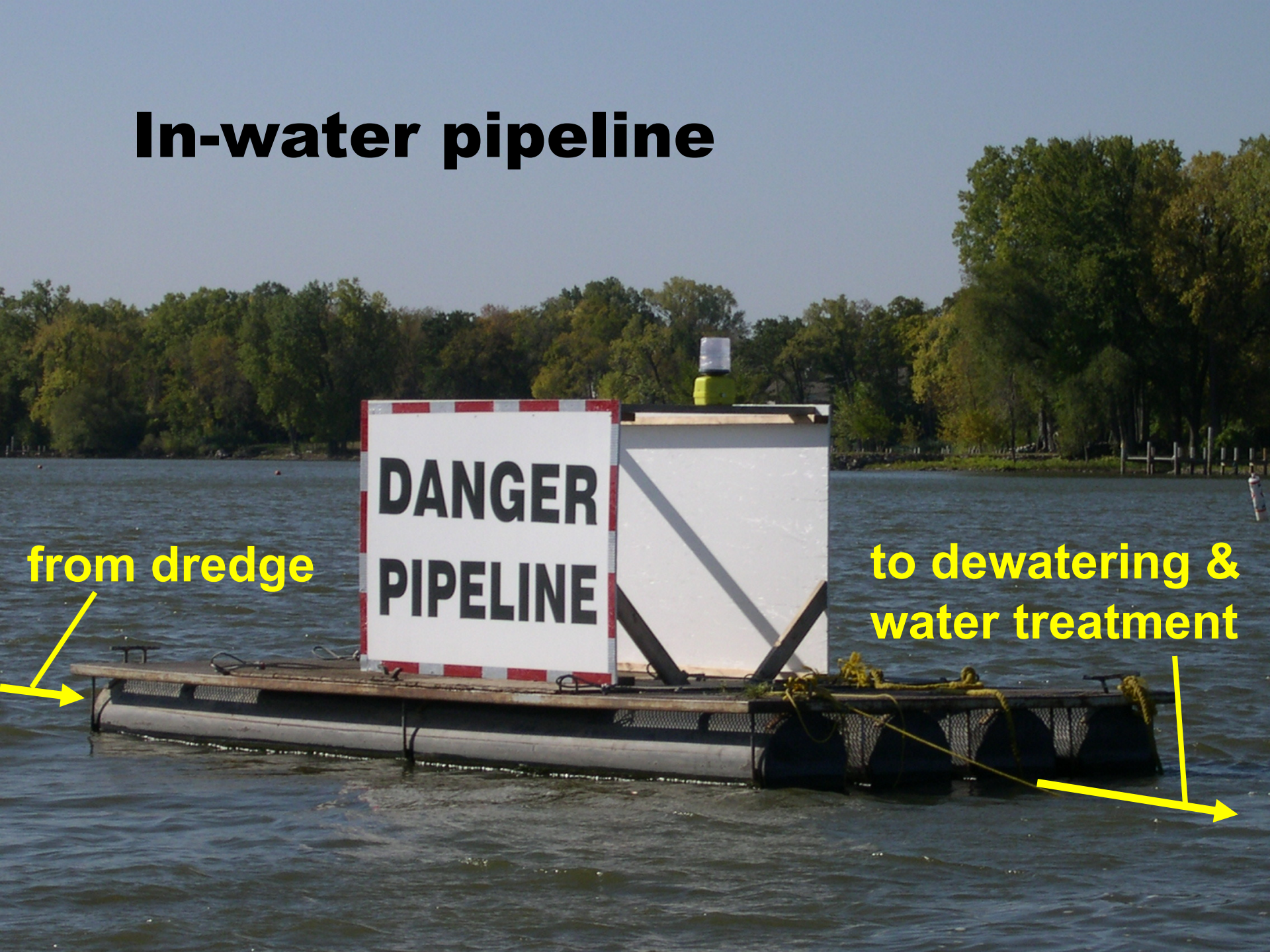
Hydraulic Dredge

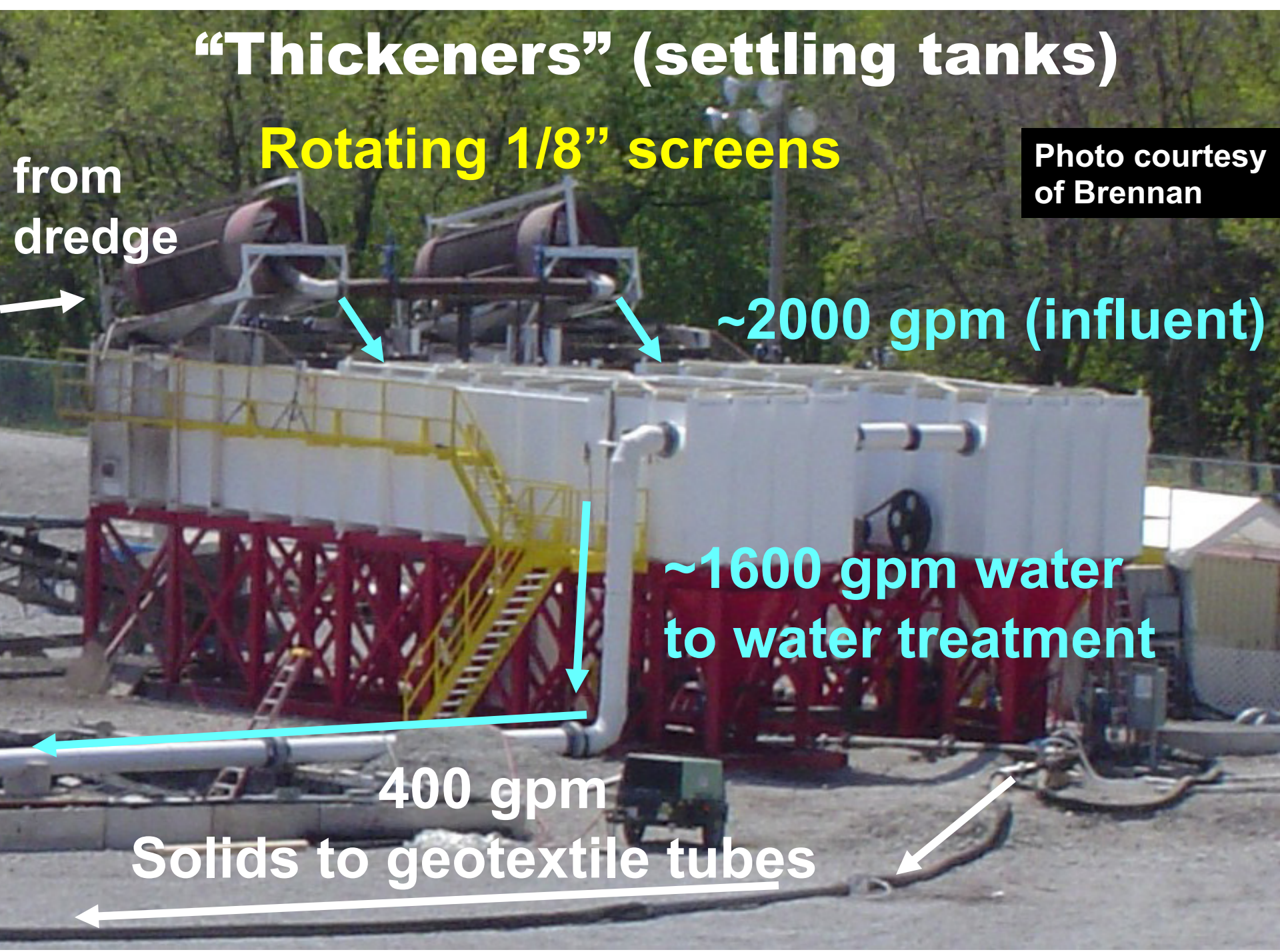
Photo courtesy of Boldt

Hydraulic dredges

Photo courtesy of WDNR

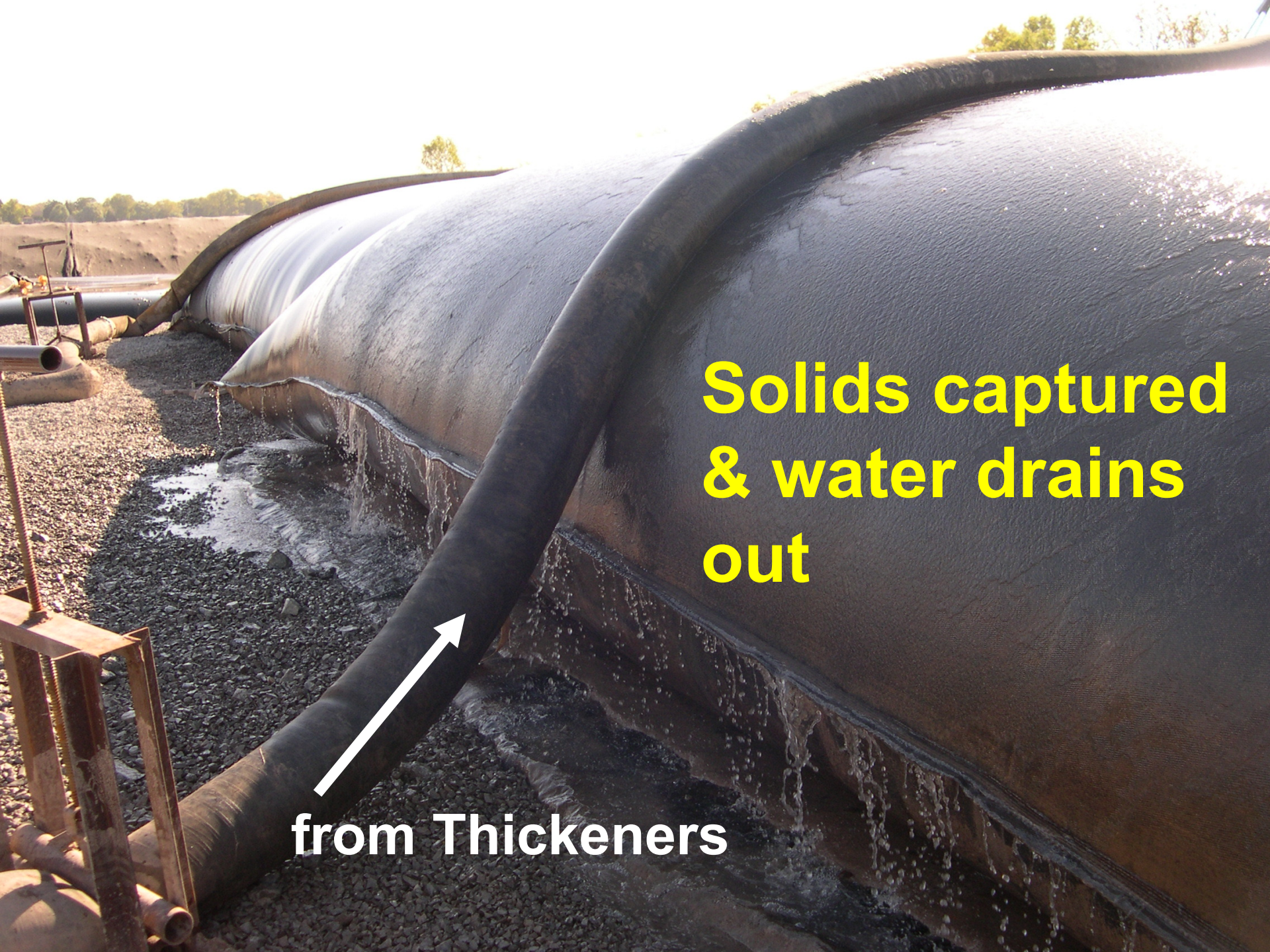
In-water pipeline




"Thickeners" (settling tanks)
Rotating 1/8" screens
Photo courtesy of Brennan
from dredge
~2000 gpm (influent)
~1600 gpm water to water treatment
400 gpm
Solids to geotextile tubes

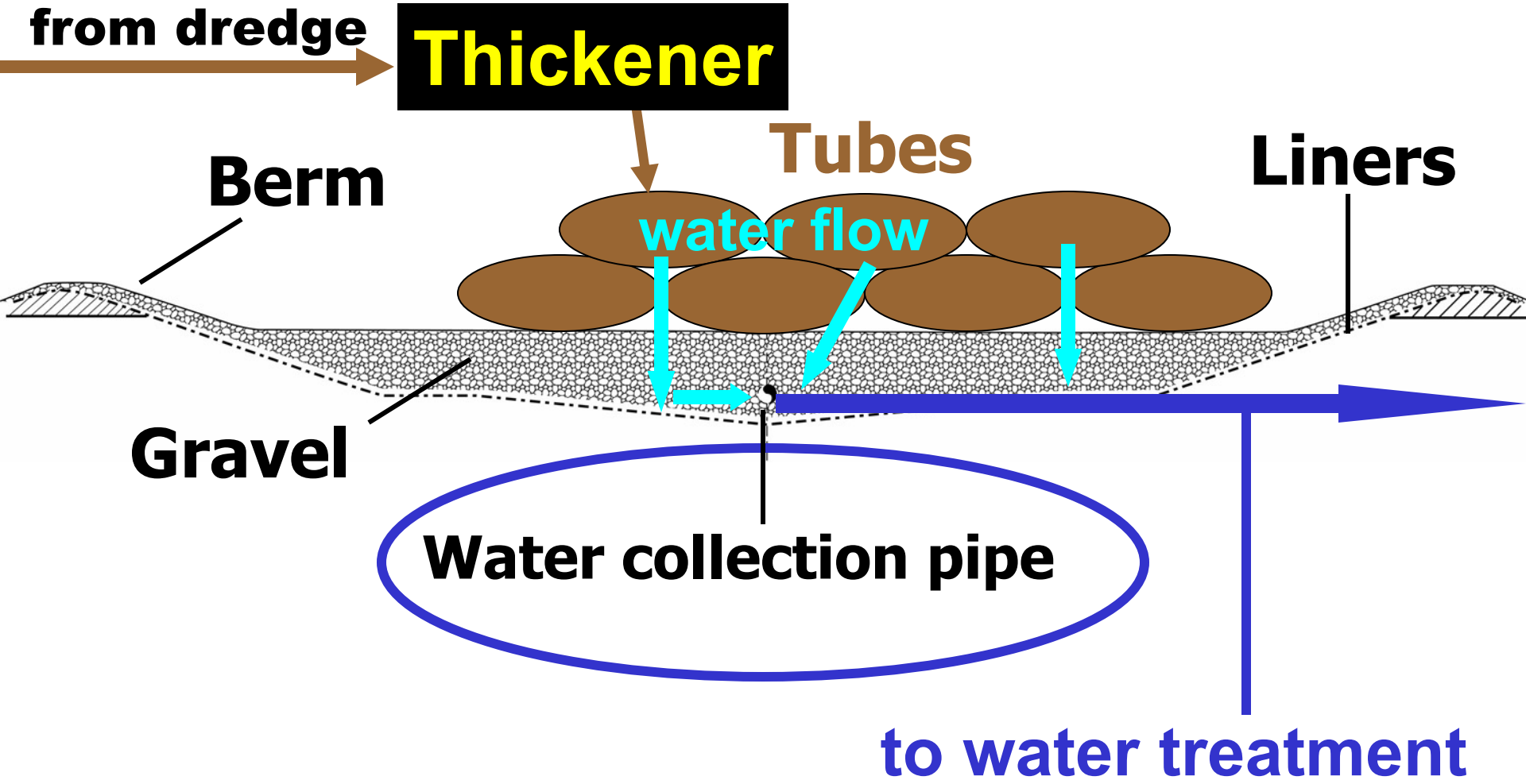
Geotextile tubes

- 200 feet long
- 60 foot circumference
- Contains ~1600 cubic yards


Solids captured
& water drains
out
from Thickeners

Stacked tubes

Geotextile tube dewatering



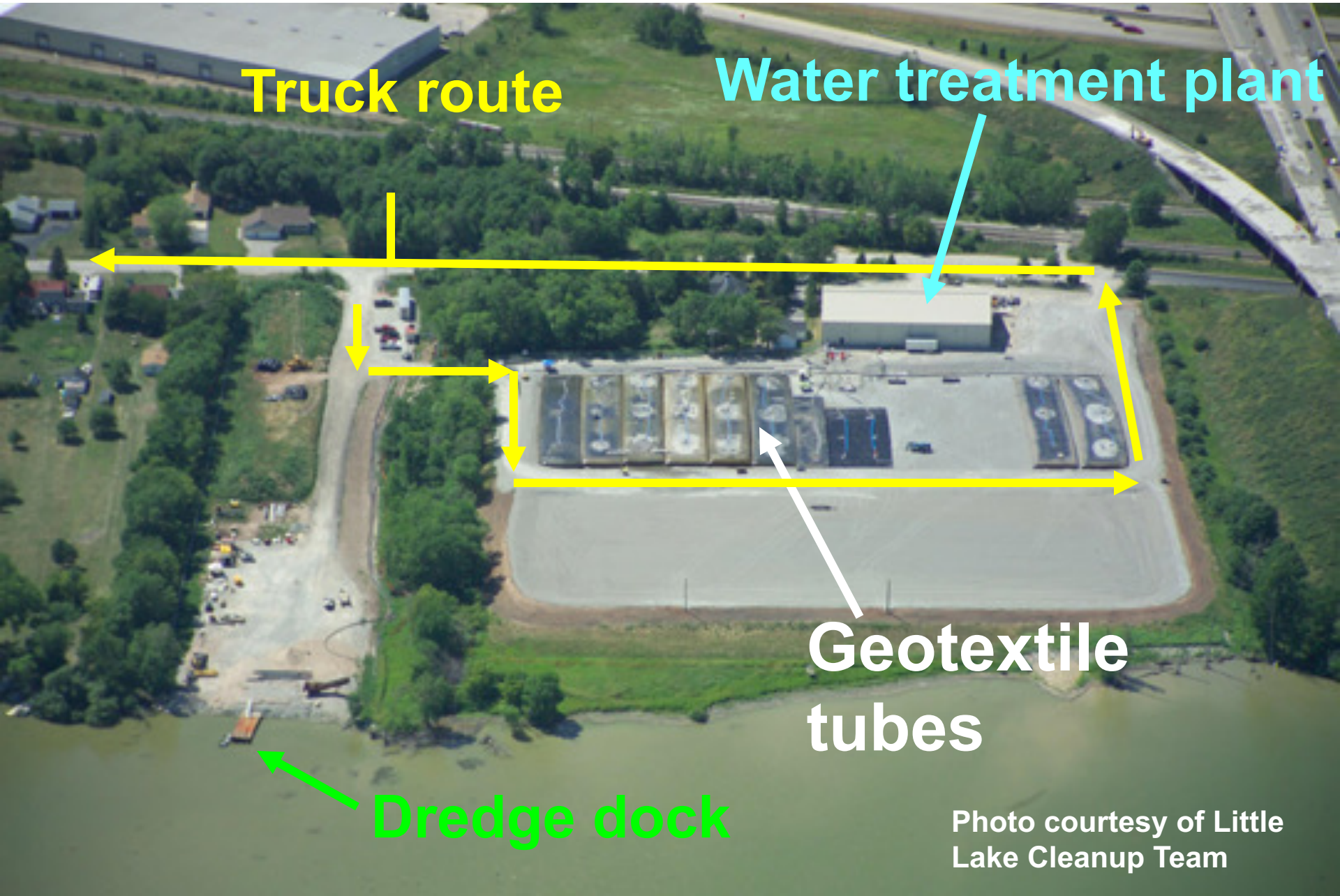
From: Little Lake Cleanup Team

Water treatment

- Carbon filters
- Bag filters
- Air flotation
- Sand/gravel filters

From: WDNR webpage

Sediment processing facility



Loading

Landfill disposal*

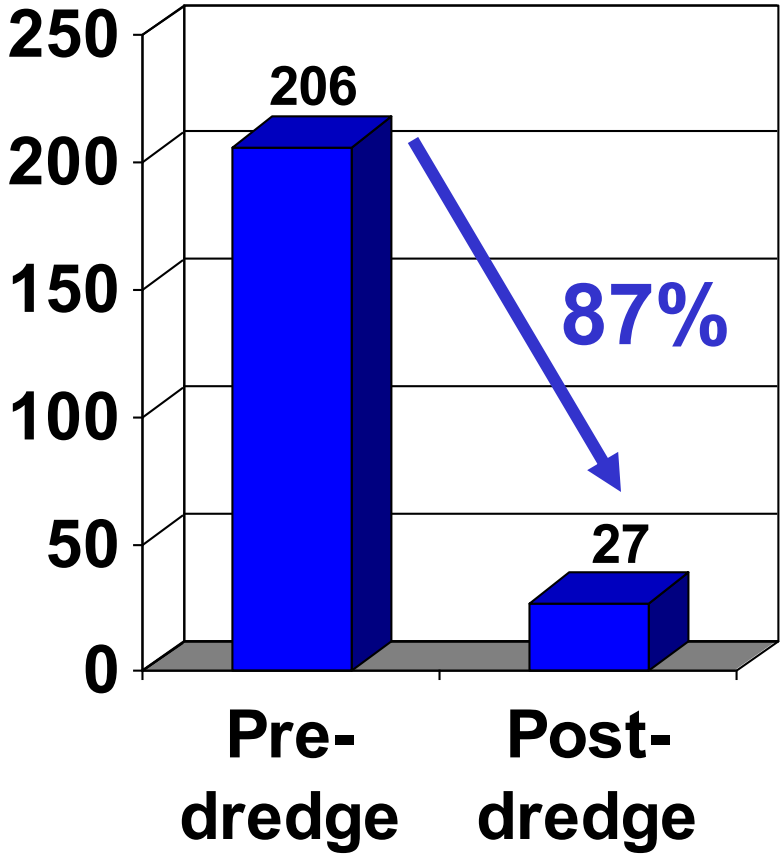
From: Little Lake Cleanup Team

*** Engineered for contaminant containment**

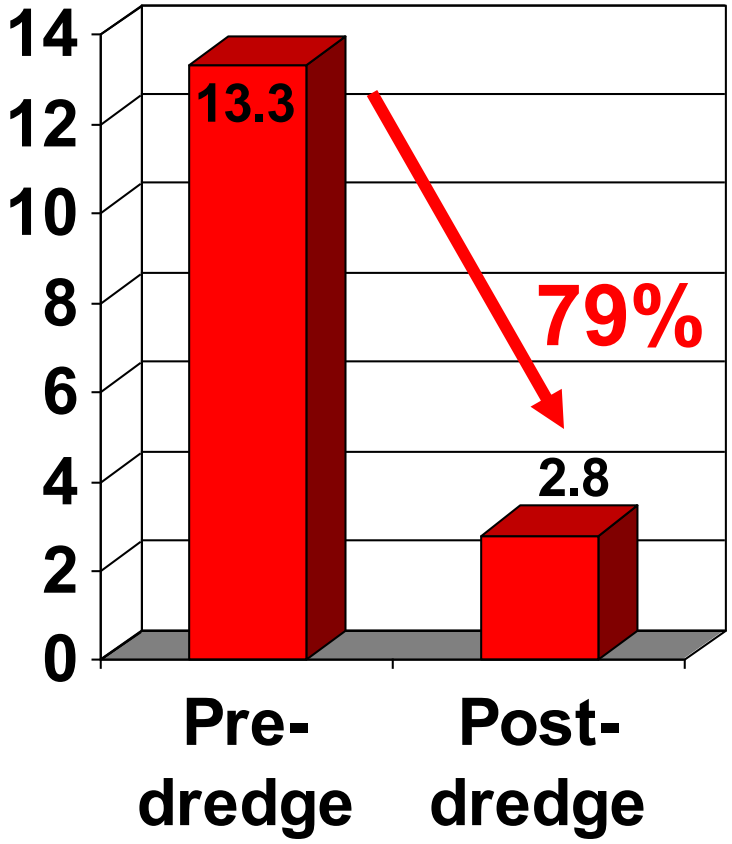
2005 Post-dredge Results

Sub-Area A

Mass (kilograms)

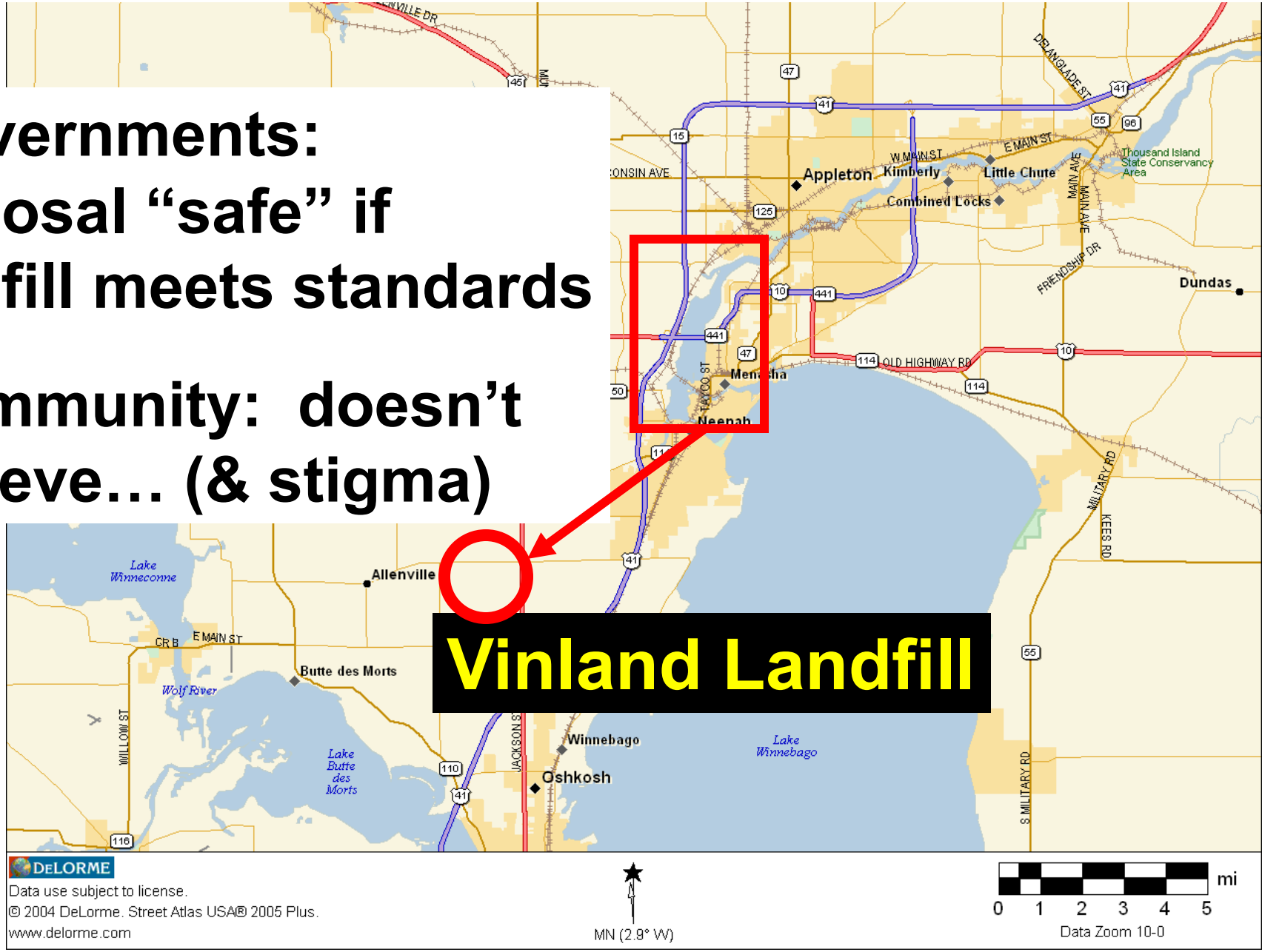


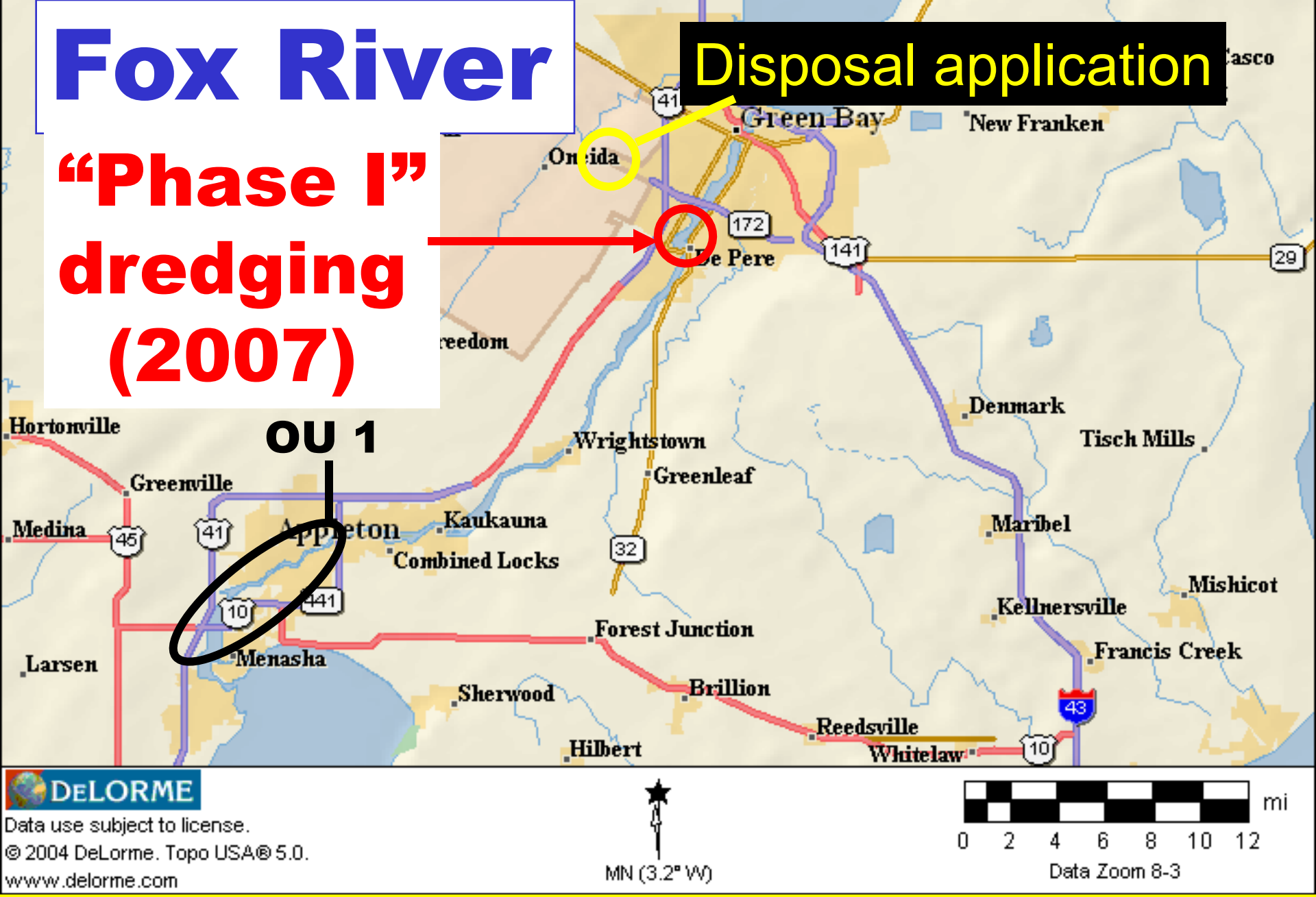
Concentrations (ppm)



Disposal Site: "Not in My Backyard"

- **Governments: disposal "safe" if landfill meets standards**
- **Community: doesn't believe… (& stigma)**




Fox River
"Phase I" dredging (2007)
Disposal application
OU 1
Green Bay
New Franken
De Pere
Denmark
Tisch Mills
Wrightstown
Greenleaf
Hortonville
Greenville
Medina
Appleton
Kaukauna
Combined Locks
Maribel
Mishicot
Kellnersville
Forest Junction
Francis Creek
Larsen
Menasha
Sherwood
Brillion
Reedsville
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mi
0 2 4 6 8 10 12
Data Zoom 8-3

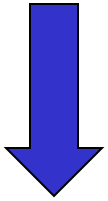
Next project: Phase I dredging

- Total volume: 142,000 cubic yards (cy)
  - 26,000 cy TSCA
  - 126,000 cy non-TSCA
- May – October 2007
- Phase II: rest of river

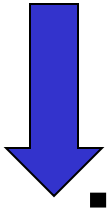
Legal stuff

Or….my life after the Record of Decision

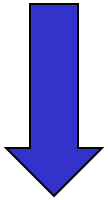
Record of Decision



Consent Decree or
Unilateral Administrative Order



Design



Cleanup

Settlement & negotiations

- **Record of Decision: basis for settlement discussions - <u>decision not negotiable</u>**
- **Consent Decree (to pay for or do the cleanup) - federal court must approve**
- **Consent Order – agreement to conduct evaluations and investigations**
- **Administrative Order – EPA orders work**

Legal issues – Superfund

Possible Legal Challenges

- **Must be consistent with National Contingency Plan (NCP)**
- **Must not be "arbitrary and capricious"**
- **Record Review: based on Administrative Record**

Legal issues - Superfund

- **Responsible parties liable - even if actions were legal at the time**
- **“Joint and several liability”**
- **Strong preference for voluntary settlement (court cases rare)**

Discussion, questions, compliments…

Photo from Ann Schell