

Dredging methods for the Fox River

Western Dredging Association Meeting

April 3, 2008

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Discussion points

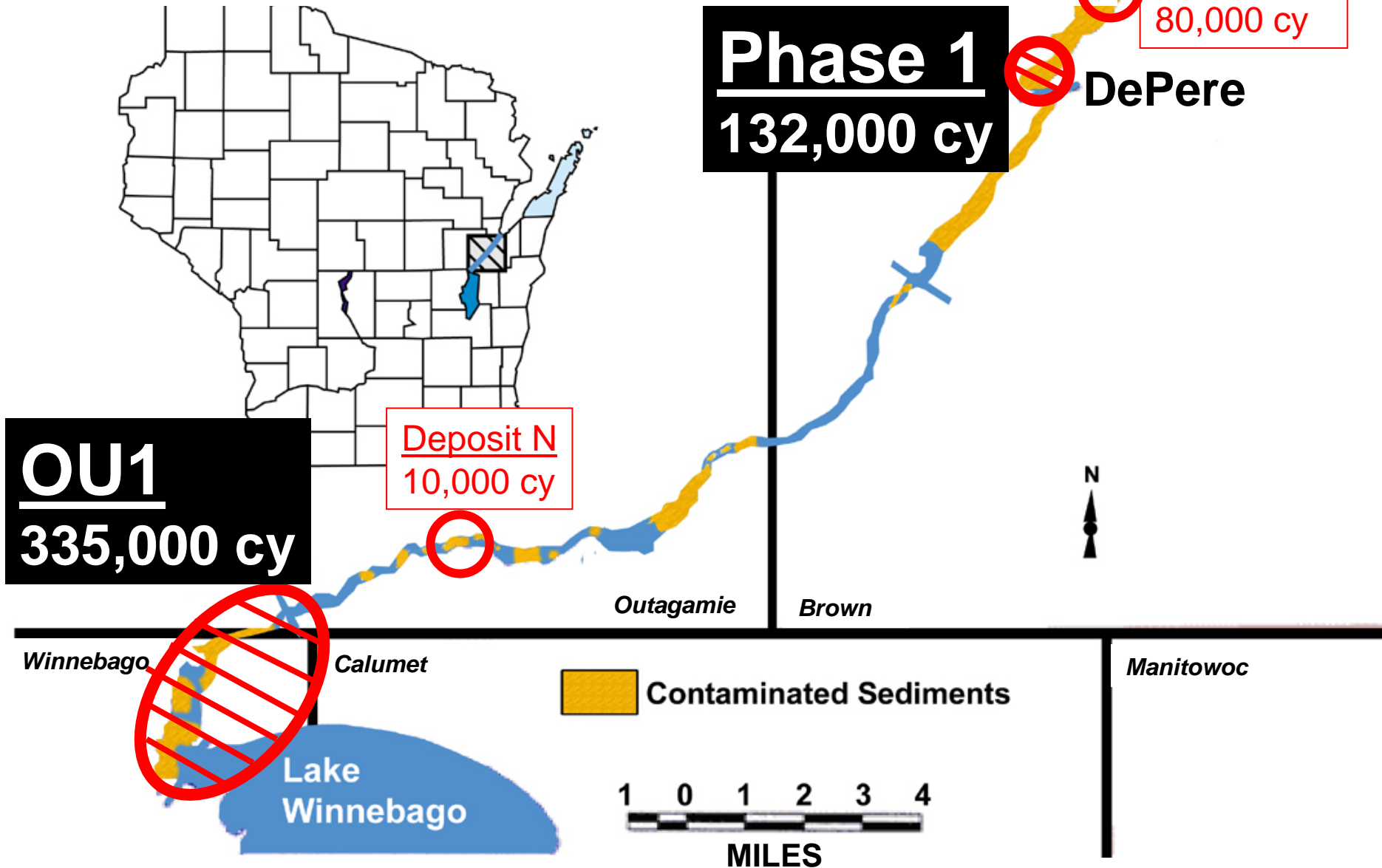
- Recent dredging projects
- Update on project status

Fox River dredging

Project	Years	Volume removed (cy's)
Deposit N	1998 – 1999	11,000
SMU 56/57	1999 – 2000	80,000
OU 1	2004 – 2007*	335,000
Phase 1	2007*	132,000
TOTAL		558,000

*** Projects continuing in 2008**

Lower Fox River Superfund Site Dredging projects



Fox River dredging & related processes

Dredging

- Horizontal auger or
- Swinging ladder cutterhead

De-sanding

- Screens & hydrocyclones or
- Screens & settling tanks

Water treatment

Bag filters/sand & gravel/activated carbon
(OU1: air flotation)

Dewatering

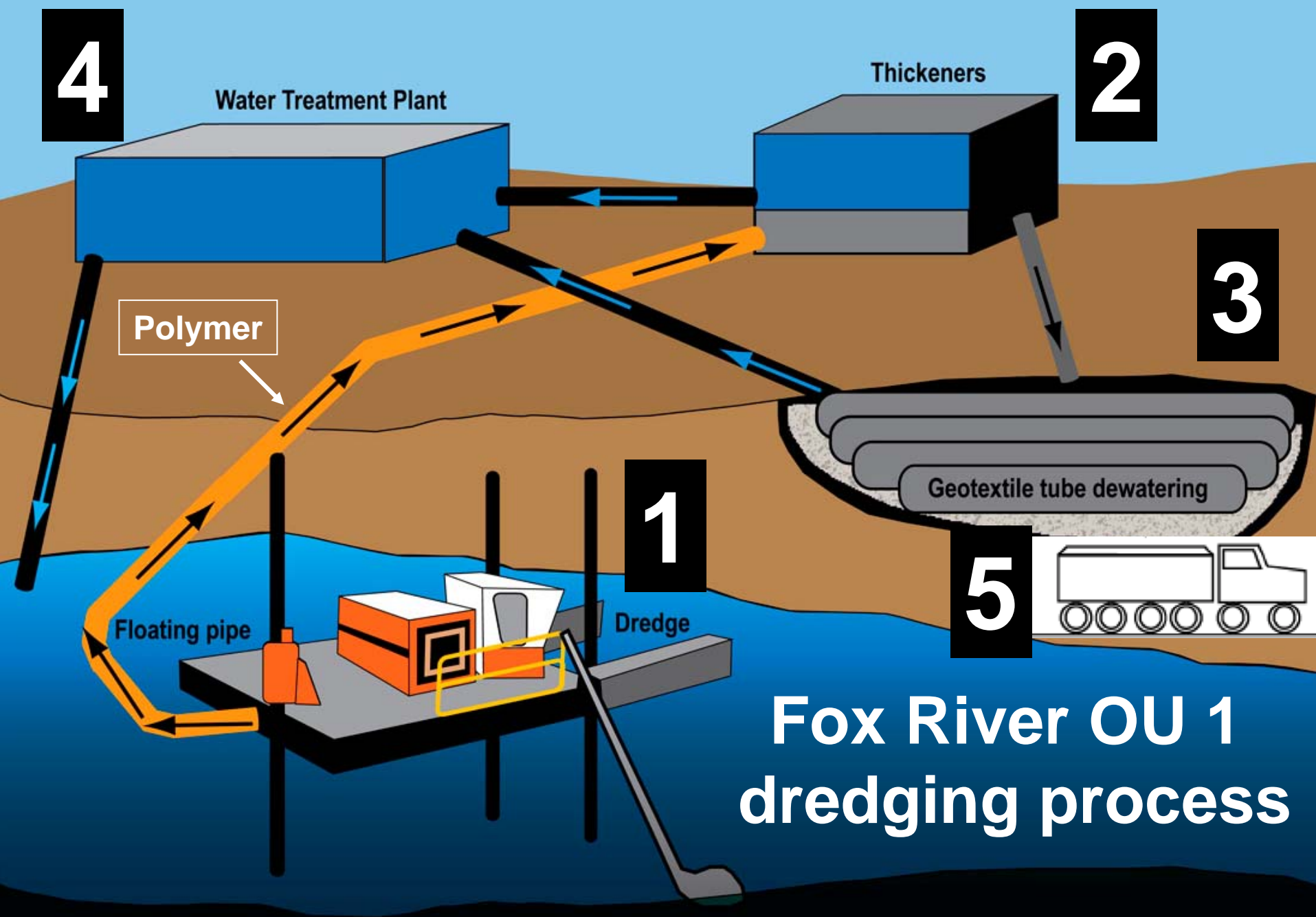
- Geotextile tubes or
- Plate and frame presses

Transportation & disposal
(TSCA & non-TSCA)

Fox Dredging Operations

Project	Dredge		Dewatering		Dredging Contractor
	Type	Slurry solids	Method	Cake Solids	
Deposit N	Swinging ladder cutterhead	2%	Plate & frame	30% to 65%	Koester
SMU 56/57	Horizontal auger	8.4%*	Plate & frame	59%*	Sevenson*
OU1	Swinging ladder cutterhead & VicVac™	2% to 5%	Geotextile tubes	30% to 50%	J.F. Brennan
Phase 1	Horizontal auger	5% to 9%	Plate and frame	55%	Sevenson

*** 2000 only**



4

Water Treatment Plant

Thickeners

2

3

Polymer

1

5



Floating pipe

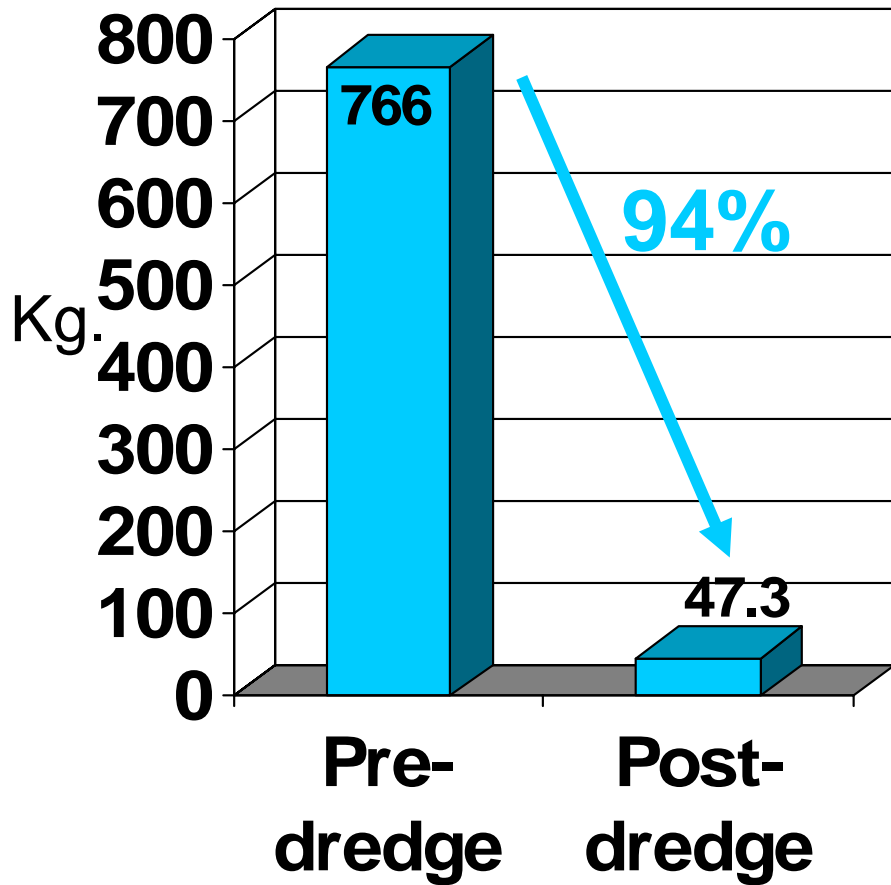
Dredge

Geotextile tube dewatering

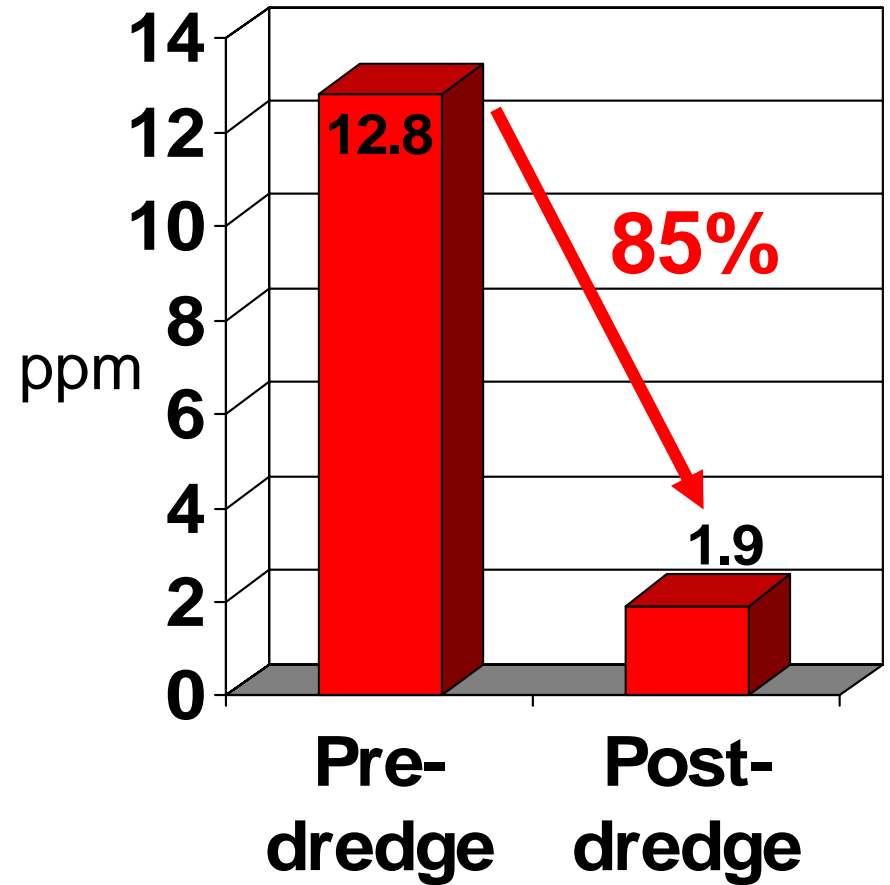
**Fox River OU 1
dredging process**

OU 1 PCB reductions 2004 - 2006

PCB mass



PCB surface conc.

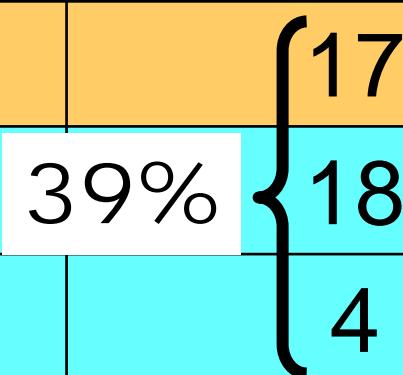


* SWAC = Surface Weighted Average Concentration

OU1 2006 operations costs

Remedy Element	Costs (%)
Dredging	17
Dewatering	18
Water Treatment	4
Transportation & Disposal	42
Environmental Monitoring	6
Project Management, Oversight, etc.	8
Contingency	5

39%



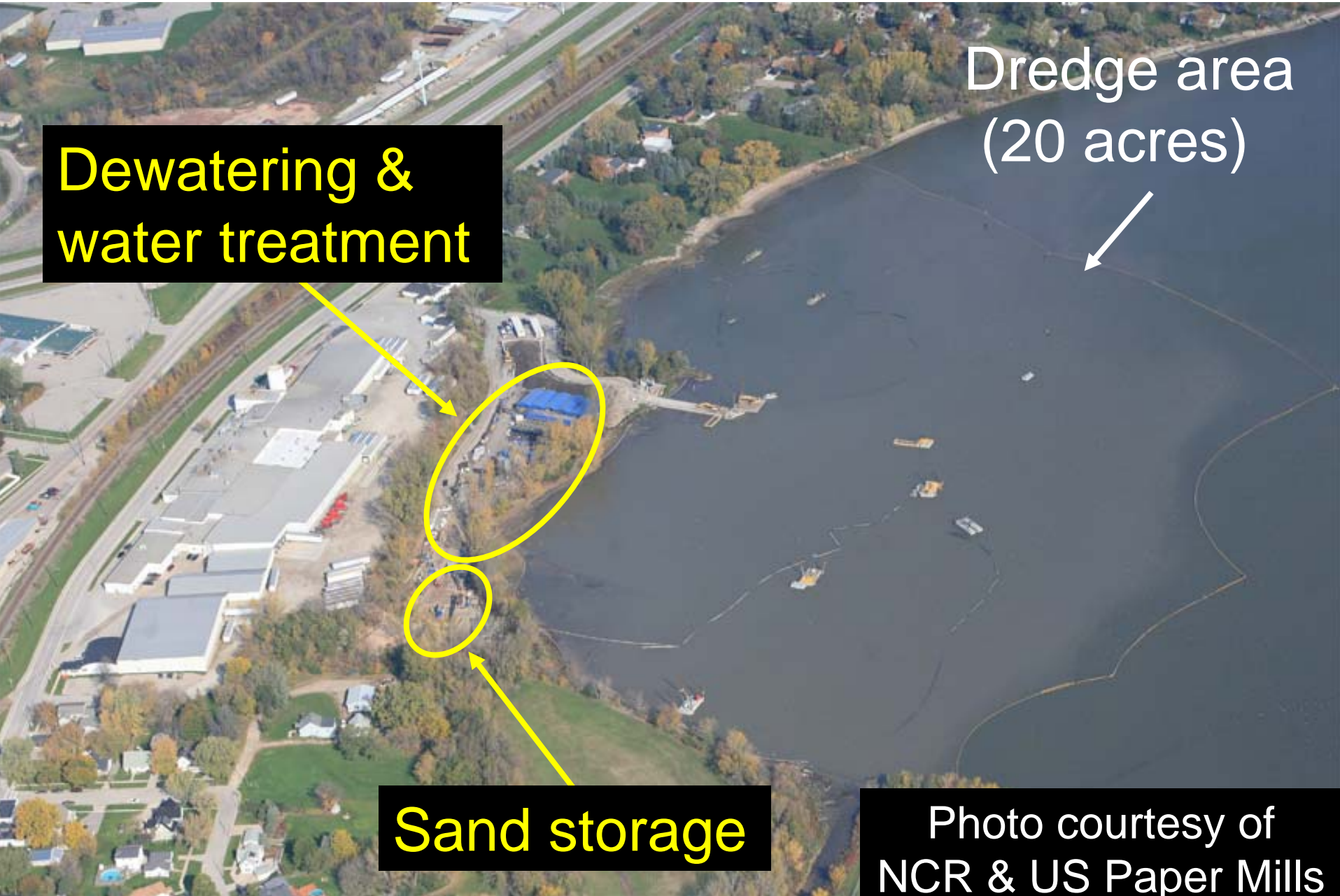
Fox River - Phase I

Dewatering & water treatment

**Dredge area
(20 acres)**

Sand storage

**Photo courtesy of
NCR & US Paper Mills**



Dewatering & water treatment areas



Dredge →

“Cake” storage

Plate and frames

Mix tanks

Water treatment →

Courtesy of NCR & US Paper Mills

Horizontal auger dredge



Photo courtesy of Boldt

Summary & comparisons

Component		OU1	Phase I
Dredge(s)		Swinging ladder	Horz. cutterhead
Dewatering method		Screen/settling tanks geotextile tubes	Screen & hydro-cyclone and plate and frame presses
Dewatering footprint		5 acres	0.5 acres
2007 removal	Volume	122,000 cy	132,000 cy
	Area	100 acres	20 acres
Contractor		J.F. Brennan	Sevenson