

DATE: May 27, 1999

FILE REF: 460143200

TO: George Meyer AD/5
Frank Fennessy AD/5
Jay Hochmuth AD/5
Gloria McCutcheon SER
Lakshmi Sridharan SER
Frank Schultz SER
Ron Kazmierczak SER
Chip Krohn Annex
Steve Galarneau Annex
Linda Meyer LS/5
Linda Talbot WT/2
Kathy Patnode WM/4
Jim Ruppel WT/2

Rep. Jim Baumgart

FROM: Thomas A. Wentland

SUBJECT: Proposed Plan Sheboygan River and Harbor

Attached for your information is the EPA Final Proposed Plan for the Sheboygan River and Harbor Superfund Site along with the official EPA News Release.

At the back of the EPA update is a Mailing List Additions form. If you would like to receive future mailing on the project directly from EPA take a few minutes to fill out the form and mail it in.

If you have any questions please call me at 414-229-0853

United States
Environmental Protection
Agency

Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

Illinois, Indiana,
Michigan, Minnesota,
Ohio, Wisconsin



Environmental NEWS RELEASE



Technical Contact: Tom Short
(312) 353-8826

Media Contact: Susan Pastor
(312) 353-1325

WDNR Contact: Tom Wentland
(414) 229-0853

For Immediate Release: May 26, 1999

No. 99-OPA145

EPA PROPOSES CLEANUP PLAN FOR SHEBOYGAN RIVER AND HARBOR SITE; COMMENT PERIOD BEGINS, MEETING JUNE 30

U.S. Environmental Protection Agency (EPA) Region 5 has recently proposed a cleanup plan to address contaminated sediment and soil at the Sheboygan River and Harbor Superfund site (Sheboygan County, WI).

A 60-day public comment period runs from June 1 to July 30. A public meeting to explain the plan, including a forum for oral and written comments, will be Wednesday, June 30, 7 p.m., Rocca Meeting Room, Mead Public Library, 710 North 8th St., Sheboygan.

EPA's proposed cleanup plan addresses the site as five separate projects. For each, EPA evaluated a range of alternatives and recommended a cost-effective cleanup plan that protects human health and the environment. The five projects and cleanup proposals are:

- Upper River Sediment: Removal of 18,200 cubic yards of sediment--containing 93 percent of the Upper River's PCB's--from 26 highly contaminated areas (Alternative 3-IV-A).

OPTIONAL FORM 00 (7-90)

FAX TRANSMITTAL

of pages 2

To Tom Wentland	From U.S. EPA
Dept./Agency WDNR Superfund	Phone #
Fax # 414 229-0810	Fax #

- more

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- Middle River Sediment: Implementation of an extensive monitoring program to determine the condition of the river and long-term potential human health impacts (Alternative 2).
- Lower River and Inner Harbor Sediment: Dredging of 100,000 cubic yards of contaminated sediment between the Pennsylvania Avenue Bridge and the Inner Harbor Mouth to ensure safe navigational depth (Alternative 5).
- Floodplain Soil: Removal and off-site disposal of soil containing PCB concentrations above 10 parts per million (Alternative 4).
- Ground Water: Additional investigation to determine the extent of the PCB contamination and the potential sources of the contamination (Alternative 2).

A detailed fact sheet that explains the site history, possible alternatives, and recommended plan is available at: www.epa.gov/region5. The fact sheet has also been mailed to interested citizens and officials, and will be available at the public meeting.

Information repositories, containing an archive of site documents and background, are located at the Mead Public Library and Sheboygan City Hall, 828 Center Ave., 2nd Floor. For more information, contact: Susan Pastor, Community Involvement Coordinator, 800-621-8431, or e-mail, pastor.susan@epa.gov.

The site includes the lower 14 miles of the river from the Sheboygan Falls Dam to, and including, the Inner Harbor. Within the site, at least 46 separate areas show contamination by PCB's, and to a lesser degree, heavy metals. This segment of the river runs through three communities--Sheboygan Falls, Kohler, and Sheboygan, before flowing into Lake Michigan. Currently, a consumption advisory is in effect for certain species of Sheboygan River and Lake Michigan fish.

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United States
Environmental Protection
Agency

Office of Public Affairs
Region 5
77 W. Jackson Blvd.
Chicago, Illinois 60604

Illinois, Indiana,
Michigan, Minnesota,
Ohio, Wisconsin

Proposed Plan for Cleanup of the Sheboygan River and Harbor Superfund Site

Sheboygan County, Wisconsin

May 1999

This Update Will Tell You About

- site background
- the proposed cleanup plan
- how you can learn more about the site

You Are Invited to a Public Meeting

U.S. EPA will hold a public meeting to explain the proposed cleanup plan for the Sheboygan River and Harbor. Oral and written comments will be accepted at the meeting.

Date: June 30, 1999

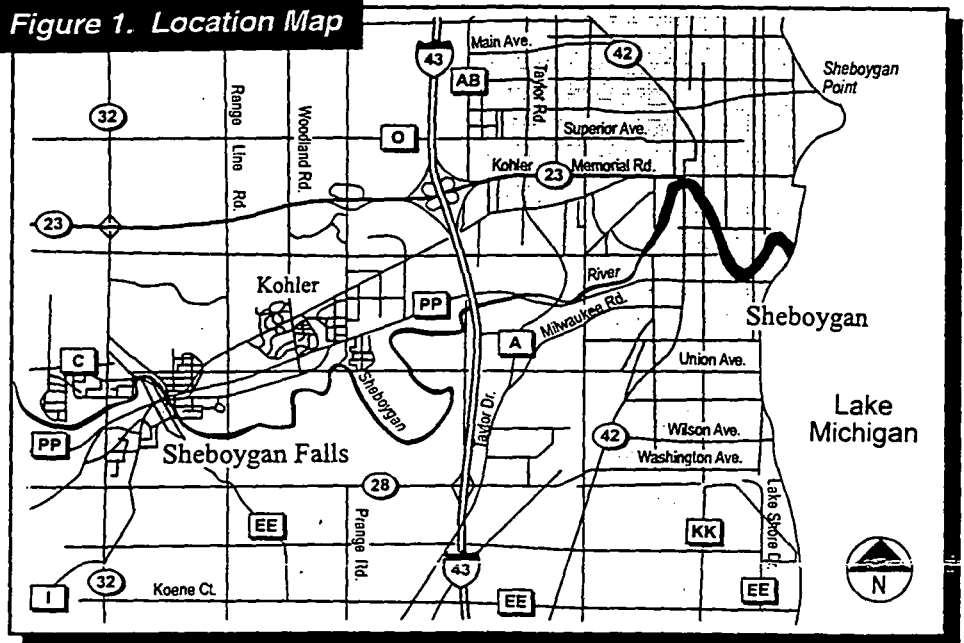
Time: 7 p.m.

Place: Mead Public Library
Rocca Meeting Room
710 North 8th Street
Sheboygan, WI

Public Comment Period

U.S. EPA will accept written comments on the proposed plan during a 60-day public comment period from June 1 to July 30, 1999. A pre-addressed comment form is included in this proposed plan.

Figure 1. Location Map



Introduction

This Proposed Plan¹ summarizes the alternatives that the United States Environmental Protection Agency (U.S. EPA) is considering for cleaning up contaminated sediment and soil at the Sheboygan River and Harbor Superfund site in Sheboygan County, Wisconsin (Figure 1, Location Map).

The Remedial Investigation (RI) and Feasibility Study (FS), and other documents used to develop the Proposed Plan are available in the information repositories and administrative record listed on page 9. The purpose of the RI is to determine the nature

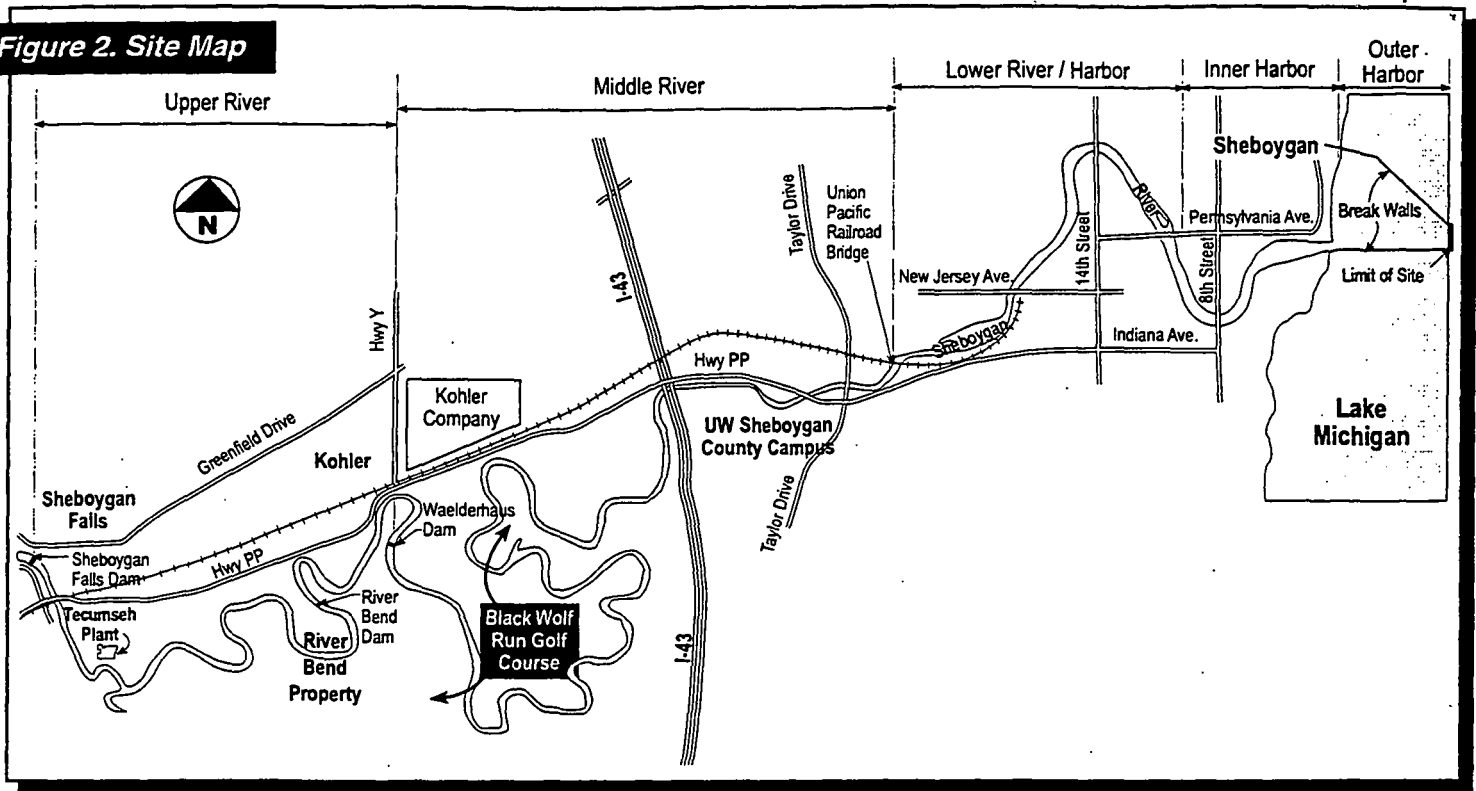
and extent of contamination at the site and the purpose of the FS is to evaluate alternatives to clean up contamination at the site. Public input on the alternatives and the information that supports these alternatives is an important part of the cleanup process. The public is encouraged to review and comment on the cleanup alternatives presented in this Proposed Plan (see sidebar).

Site Background

The Sheboygan River and Harbor site includes the lower 14 miles of the river from the Sheboygan Falls Dam down-

¹ Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires publication of a notice and a Proposed Plan for the site remediation. The Proposed Plan must also be made available to the public for comment. This proposed plan is a summary of information contained in the remedial investigation, feasibility study, and other documents in the administrative record for the Sheboygan River and Harbor site. Please consult those documents for more detailed information.

Figure 2. Site Map



stream to, and including, the Inner Harbor. This segment of the river flows through Sheboygan Falls, Kohler, and Sheboygan before entering Lake Michigan.

As part of the RI, the river was divided into three sections based on physical characteristics such as average depth, width, and level of contamination (see Figure 2, Site Map). The Upper River extends from the Sheboygan Falls Dam downstream 4 miles to the Waelderhaus Dam in Kohler. Tecumseh Product Company's Sheboygan Falls Plant is located on the Upper River and is considered the primary source of polychlorinated biphenyl (PCB) contamination. The Middle River extends 7 miles from the Waelderhaus Dam to the Union Pacific railroad bridge. The Lower River extends 3 miles from the Union Pacific railroad bridge to the Pennsylvania Avenue bridge in downtown Sheboygan.

The Inner Harbor includes the Sheboygan River from the Pennsylvania Avenue Bridge to the river's outlet to the Outer Harbor. The Outer Harbor is defined as the area formed by the two breakwalls.

Land use along the Upper River is industrial and residential in Sheboygan Falls. The Kohler Company owns land adjacent to the Middle River in Kohler. Land use in this area consists of a horse farm, tree nursery, and the company's historic River Bend property and the Black Wolf Run golf course. The 800-acre, Kohler-owned River Wildlife Area is on the south side of the river adjacent to the Upper and Middle River. The wildlife area is used as a private hunting and fishing club. Land use adjacent to the Lower River and Inner Harbor is primarily commercial and industrial with some residential areas. A waterfowl (ducks, geese, etc.) consumption advisory exists for the Sheboygan River and Harbor.

The Sheboygan River is not used as a public water supply, but it drains into Lake Michigan which is used as a drinking water supply by Sheboygan, Sheboygan Falls, and Kohler. Public water from the utilities are regularly tested and are safe to drink. There are no public beaches along the river or harbor. There is considerable seasonal fishing in the Inner Harbor and Lower and Middle River. Fishing is

more limited in the Upper River. According to Wisconsin Department of Natural Resources (WDNR) surveys, most fishing occurs during spring and fall salmon and trout runs. A fish consumption advisory is in effect for Sheboygan River and Lake Michigan fish.

Site History

During routine sampling of fish from the Sheboygan River in 1977, the WDNR found unsafe levels of PCBs in the fish. The presence of PCBs and metals was confirmed in 1979 during harbor dredging. In the late 1970s, Tecumseh removed some PCB-contaminated soil from its Sheboygan Falls facility. The site was placed on U.S. EPA's National Priorities List (NPL) in 1986. The NPL is a list of the nation's most serious uncontrolled or abandoned hazardous waste sites.

Tecumseh prepared the RI between 1987 and 1990. The results of the RI are summarized below under "Site Contamination." During the RI, several areas of the most heavily contaminated sediment were identified in the Upper River. U.S. EPA deter-

mined that these areas should be addressed as soon as possible. In 1990 and 1991, U.S. EPA asked Tecumseh to remove about 4,000 cubic yards of contaminated sediment from these "hot spots." This sediment was stored in two containment facilities at Tecumseh's Sheboygan Falls plant. In addition, approximately 1,200 square yards of highly contaminated sediment were capped or "armored" in place to prevent contaminants in the sediment from entering the river. Information developed during these activities is described in a document called an Alternative Specific Remedial Investigation (ASRI) report.

After numerous studies and tests of possible cleanup methods, the FS was completed in April 1998. The results of the FS are summarized under "Summary of Alternatives" on page 4.

Site Contamination

Investigations conducted during the RI located PCBs and eight heavy metals in the river and harbor sediment. PCBs are the most hazardous contaminant in the river and harbor and therefore the cleanup alternatives are primarily focused on cleaning up PCBs. Currently, PCB concentrations in sediment range from 0.27 parts per million (ppm) to 750 ppm, but tend to be highest in the Upper River and Inner Harbor. Sheboygan River sediment containing PCBs greater than 1 ppm is a concern.

Fish tissue samples collected between 1990 and 1998 show smallmouth bass and white sucker PCB concentrations ranging from 1.3 ppm to 23.1 ppm. Carp had PCB levels ranging from 10.5 to 200 ppm. Fish containing PCB levels of approximately 1 ppm or higher are a concern. In general, the highest fish PCB concentrations were found near the Tecumseh plant and decrease downstream from the plant. Consumption advisories for fish and waterfowl taken from the Sheboygan River have been in place for years, mainly because of PCB contamina-

Cleanup Goal Summary

Considering human and aquatic health risk, 1 ppm of PCB is the cleanup goal for all river sediment. Based on human and wildlife health risks, 10 ppm of PCB is the cleanup goal for floodplain soil.

tion. These advisories are for the entire 14-mile stretch from Sheboygan Falls to Lake Michigan. PCB contamination is also present in ground water at the Tecumseh plant.

In addition, floodplain areas along the river were found to have PCB-contaminated soil ranging from 4 to 220 ppm. Concentrations above 10 ppm in floodplain areas are a concern.

Health Risk Assessment

U.S. EPA evaluated the human health risk associated with contaminated river and harbor sediment and floodplain soil. U.S. EPA assumed that the primary way people would come in contact with contaminated sediment is by eating fish from the Sheboygan River. Based on U.S. EPA's analysis, an adult eating two 8-ounce fillets from the Sheboygan River would ingest PCBs at 184 times the recommended daily maximum level. To reduce risks to human health posed by high PCB levels, U.S. EPA's cleanup goal is to remove enough contaminated sediment to reach an average river PCB sediment concentration of 1 ppm within 30 years.

PCB-contaminated sediment also poses a risk to fish and wildlife that come in contact with contaminated sediment or floodplain soil. U.S. EPA has analyzed ecological risk, in consultation with the natural resource trustees. Although the optimal cleanup goal would be to achieve 0.05 ppm PCBs in sediment and 0.81 ppm in floodplain soil, U.S. EPA has concluded that a cleanup goal of approximately 1 ppm PCBs in sediment and

Natural Resources Trustees

U.S. EPA is the *lead agency* for the cleanup of the Sheboygan River and Harbor and other similar Superfund sites. U.S. EPA is given this authority under the Superfund law. However, Superfund also gives several other state, tribal, and federal agencies responsibility for protecting natural resources such as land, fish, wildlife, air, and water. These agencies are called *trustees* for these resources and Superfund requires U.S. EPA to coordinate with them.

The natural resource trustees involved in the Sheboygan River and Harbor cleanup are the WDNR, U.S. Fish and Wildlife Service (FWS), and the National Oceanic and Atmospheric Administration (NOAA). U.S. EPA works with these agencies during the assessments, investigations, and planning for the Sheboygan River and Harbor site. The trustees share authority for fisheries, wildlife resources, and the public use of waterway resources such as the Sheboygan River and Harbor.

The trustees are working with U.S. EPA to coordinate natural resource concerns in the proposed plan for cleanup of the Sheboygan River and Harbor. The trustees are meeting to ensure that a proposed cleanup plan is developed that includes protection and restoration of these resources. However, this proposed plan does not include the trustees' concerns. They will be incorporated into the overall site cleanup plan.

10 ppm in floodplain soil will adequately protect fish and wildlife.²

Summary of Alternatives

Based on RI/FS reports and previous investigations, U.S. EPA evaluated several alternatives to address contamination in and near the Sheboygan River and Harbor. Because the level of contamination varies in different parts of the river, the proposed cleanup plan has five components: 1) Upper River sediment; 2) Middle River sediment; 3) Lower River and Harbor sediment; 4) floodplain soil adjacent to the river; and 5) ground water near Tecumseh's Sheboygan Falls plant. For the three river sediment components, a long-term monitoring plan which includes 30 years of fish sampling will be implemented.

In evaluating the alternatives, U.S. EPA considered the level of protection that would satisfy the concern of the natural resource trustees that future natural resource impacts are minimized. The natural resource trustees have concluded that, given the proposed cleanup level of 1 ppm PCBs in soft sediment and 10 ppm PCBs in floodplain soil, the natural resources will continue to incur some additional adverse impacts. Compensation for these impacts will be sought along with the cost of restoring the natural resources. U.S. EPA also considered the extent to which implementing the alternatives could bring about additional adverse impacts to natural resources.

Upper River Sediment

Approximately 46 separate areas of PCB-contaminated sediment have been identified in the Upper River, but because of recent flooding on the Sheboygan River, the location and size of some of these deposits may have changed since the deposits were originally identified. U.S. EPA's goal is to reduce the current health risks to safe levels by removing a sufficient amount of PCB-contaminated sediment. Three

alternatives were developed to address Upper River sediment. There are six sub-alternatives under the removal alternative.

Alternative 1: No Action. No further action would be taken in the Upper River beyond dredging and armoring already completed. Fish and waterfowl consumption advisories would remain in place until monitoring indicates they can be dropped. Contaminated sediment stored at the Tecumseh plant would be disposed of in a WDNR-approved landfill. **Cost: \$2.6 million.**

Alternative 2: Natural Recovery/Monitoring. Sediment monitoring would be done every 5 years and annual fish monitoring would take place for 30 years. Periodic maintenance of already-capped areas would also continue for 30 years. Contaminated sediment stored at the Tecumseh plant would be disposed of in a WDNR-approved landfill. **Cost: \$4.8 million.**

Alternative 3: Removal. Six Upper River sediment removal sub-alternatives have been developed. The sub-alternatives vary in terms of the amount of sediment and PCBs that would be removed and build upon each other. For example, sediment removed under Alternative 3B includes sediment removed under Alternative 3A. Sediment removed under Alternative 3C includes sediment removed under Alternative 3B which includes sediment removed under Alternative 3A. PCB percentages included in the FS represent PCB amounts in the river before the 1991 removal. PCB percentages in the following six alternatives represent the remaining PCBs in the river (excluding prior removal activities). All removal alternatives will likely use mechanical dredging to remove the contaminated sediment (see "The Dredging Process" on page 5). The contaminated sediment will then be placed in either a solid waste landfill or licensed hazardous waste landfill

depending on the level of PCB concentration. Contaminated sediment stored at the Tecumseh plant would be disposed of in a licensed hazardous waste landfill due to its high concentration.

Alternative 3-I: Approximately 5,400 cubic yards of sediment containing 37 percent of the Upper River's PCBs would be removed from six highly contaminated areas. **Cost: \$12.2 million.**

Alternative 3-II: Approximately 7,500 cubic yards of sediment containing 68 percent of the Upper River's PCBs would be removed from 15 highly contaminated areas. **Cost: \$15.6 million.**

Alternative 3-III: Approximately 8,900 cubic yards of sediment containing 79 percent of the Upper River's PCBs would be removed from 17 highly contaminated areas. **Cost: \$17.4 million.**

Alternative 3-IV: Approximately 13,800 cubic yards of sediment containing 85 percent of the Upper River's PCBs would be removed from 18 highly contaminated areas. **Cost: \$23.8 million.**

Alternative 3-IV-A (RECOMMENDED ALTERNATIVE): Approximately 18,200 cubic yards of sediment containing 93 percent of the Upper River's PCBs would be removed from 26 highly contaminated areas. **Cost: \$31.4 million.** This alternative represents a variation of the removal alternatives presented in the FS.

Alternative 3-V: Approximately 22,500 cubic yards of sediment containing 98 percent of the Upper River's PCBs would be removed from 55 highly contaminated areas. **Cost: \$34.6 million.**

Middle River Sediment

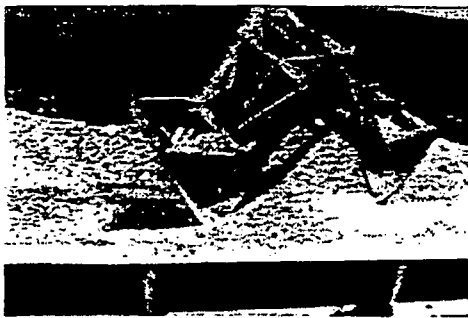
The Middle River contains relatively low levels of PCBs and some heavy metals. Average PCB levels are 2 ppm. Two alternatives were devel-

²A sediment concentration of 0.05 ppm is considered completely protective of fish and wildlife. A sediment concentration of 1.5 ppm is considered to have minor impacts on the most sensitive species.

oped for the Middle River:

Alternative 1: No Action. Similar to the No-Action Alternative for the Upper River, nothing would be done in the Middle River under this alternative. Fish and waterfowl consumption advisories would remain in place until monitoring indicates they can be dropped. Cost: \$0.

Alternative 2: Monitoring (RECOMMENDED ALTERNATIVE). Due to the presence of PCB contamination and the dynamic nature of the river, an extensive monitoring program would be implemented to gauge the condition of the river and potential human health impacts over time. Monitoring will provide valuable information on changing conditions that may warrant removal of PCB-contaminated sediment. Although no cleanup is recommended in the Middle River at this time, monitoring may indicate that a



A clamshell bucket similar to what may be used for dredging the Sheboygan River.

cleanup will be required at some point in the future. Cost: \$1.8 million (does not include cost of possible future cleanup).

Lower River and Inner Harbor Sediment

Seven alternatives were developed for the Lower River and Harbor. Alternatives 3, 5, and 6 were developed by U.S. EPA and are not included in the FS. All alternatives other than Alternative 5 and 7 will require institutional controls to prohibit dredging and other activities in the Lower River and Inner Harbor that would disturb sediment with unsafe levels of PCB contamination.

Alternative 1: No Action. Similar to the No-Action Alternative for the Upper and Middle River, nothing would be done in the Lower River and Harbor under this alternative. Fish and waterfowl consumption advisories would remain in place until monitoring indicates they can be dropped. Cost: \$0.

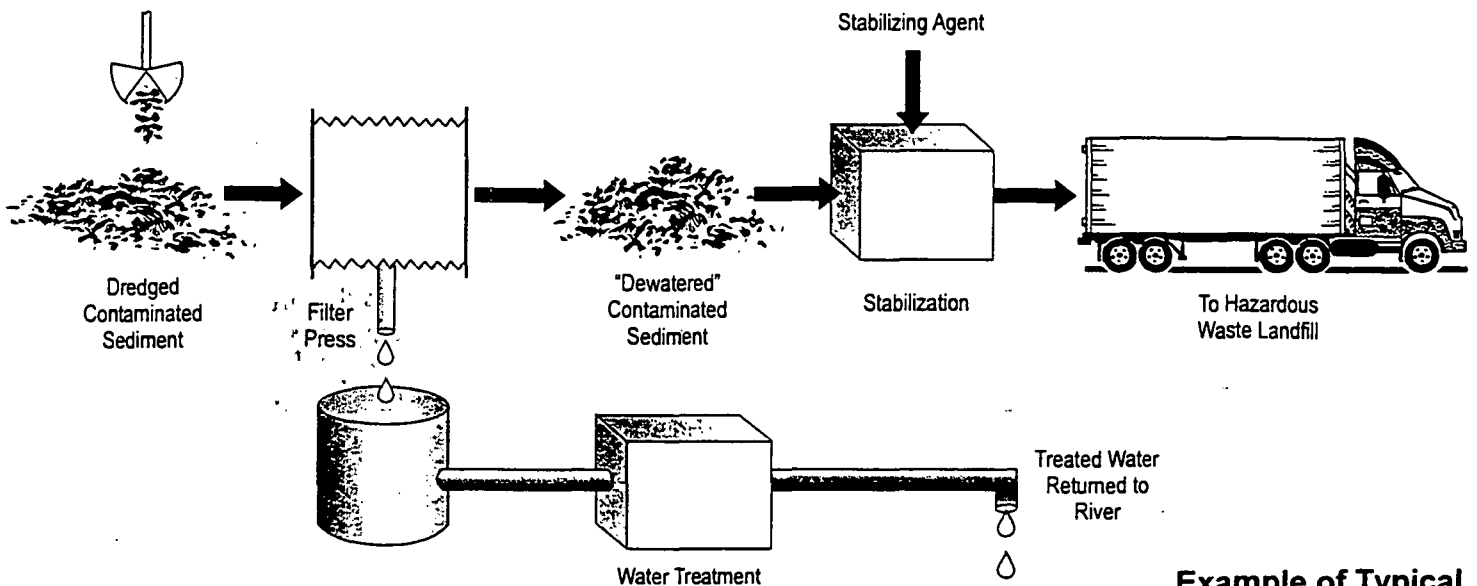
Alternative 2: Natural Recovery and Monitoring. Sediment monitoring every 5 years and annual fish monitoring would take place for 30 years. Fish and waterfowl consumption advisories would remain in place until monitoring indicates they can be dropped. Cost: \$1.2 million.

The Dredging Process

The exact dredging procedure will be developed during the upcoming design phase of the cleanup process. However, a typical dredging and treatment process for contaminated sediment is depicted below. The contaminated sediment will be dredged from the river bottom with a clamshell bucket (see picture at left). Then a filter press squeezes water out of the sediment, a process called "dewatering." The water is treated and returned to

the river. The dewatered sediment is stabilized to make it easier to transport. It is then shipped by truck to a licensed solid waste or hazardous waste landfill.

Dewatering is a commonly used technology to clean contaminated sediment. For example, the Lower Fox River site in Wisconsin, and the Manistique Harbor and Ford Outfall sites in Michigan have used dewatering.



Example of Typical Dredging Process

Alternative 3: Inner Harbor Sediment Removal and Sediment Trap. Approximately 27,000 cubic yards of contaminated sediment would be excavated. A sediment trap would be installed to capture contaminated sediment and keep it from entering Lake Michigan. The sediment trap would also remove 3 to 10 percent of the PCB mass in the Inner Harbor. **Cost: \$16.2 million.**

Alternative 4: Inner Harbor Sediment Capping. Approximately 35 acres of sediment in the Lower River and Inner Harbor would be covered with a geotextile fabric, 20 inches of course-grained stone, and 12 inches of 6- to 8-inch diameter stone. Annual fish monitoring and 5-year sediment monitoring would take place to evaluate the effectiveness of the capping. **Cost: \$16.6 million.**

Alternative 5: Inner Harbor Sediment Removal-Safe Navigational Depth (RECOMMENDED ALTERNATIVE). Under this alternative, approximately 100,000 cubic yards of contaminated sediment between the Pennsylvania Avenue Bridge and the Inner Harbor mouth would be dredged. This alternative also includes dredging of the Inner Harbor to 14 feet and replacing the contaminated sediment with 2 feet of clean sediment to provide a safe navigational depth of 10 to 12 feet. **Cost: \$26.9 million.**

Alternative 6: Inner Harbor Sediment Removal-Surface Sediment. Under this alternative, only the top 2 feet, approximately 117,000 cubic yards, of contaminated sediment would be dredged from the harbor and replaced with clean sediment. **Cost: \$33.4 million.**

Alternative 7: Inner Harbor Sediment Removal. Approximately 960,000 cubic yards of sediment would be dredged between the Pennsylvania Avenue bridge and the mouth of the Inner Harbor. The dredged sediment would be dewatered, stabilized, and disposed of in a WDNR-approved in-state landfill. Annual fish monitoring and 5-year

sediment monitoring would also occur. **Cost: \$340.7 million.**

All seven alternatives include maintaining the existing north and south breakwalls. The breakwalls protect Harbor sediment from Lake Michigan wave action and keep the highest levels of contaminated PCB sediment buried.

Floodplain Soil

There are four alternatives for cleaning up contaminated floodplain adjacent to the river:

Alternative 1: No Action. Under this alternative, nothing would be done and floodplain soil would remain in its current state. **Cost: \$0.**

Alternative 2: Bank Soil Stabilization. The upper 12 inches of soil would be removed from the river bank (from the waterline to where mature vegetation starts). Areas susceptible to erosion would be rehabilitated to prevent erosion. **Cost: \$700,000.**

Alternative 3: Removal of Soil Containing More than 50 ppm of PCBs. Floodplain soil containing PCB concentrations greater than 50 ppm would be removed and disposed of off site at a licensed hazardous waste landfill. **Cost: \$2.1 million.**

Alternative 4: Removal of Soil Containing More than 10 ppm of PCBs (RECOMMENDED ALTERNATIVE). Floodplain soil containing PCB concentrations greater than 10 ppm would be removed and disposed of off site at a licensed hazardous waste landfill. However, in some localized areas contaminated soil with more than 10 ppm may be left in place to avoid impacts to high-quality forested habitat. **Cost: \$5.2 million.**

Ground Water

Ground water at Tecumseh's Sheboygan Falls plant contains elevated levels of PCBs. There are no other known areas of PCB-contaminated ground water in the area. The four alternatives for addressing PCB-contaminated ground water are:

Alternative 1: No Action. Under this alternative, natural processes would be expected to reduce/limit the ground-water PCB contamination over time. **Cost: \$0.**

Alternative 2: Investigation/Natural Attenuation/Source Identification and Control (RECOMMENDED ALTERNATIVE). Additional ground-water investigations would occur to determine the extent of the PCB contamination and the potential sources of the contamination. If additional sources of contamination are discovered, they will be addressed during the cleanup. Following this investigation, a decision will be made regarding cleanup options including the potential for relying on natural attenuation (the natural breakdown of contaminants into less harmful components). However, if natural attenuation is inappropriate to clean up ground water, Alternative 3 will be selected. **Cost: \$600,000** (does not include cost of possible future cleanup).

Alternative 3: Collection Trench and Treatment. This alternative includes collecting ground water in a ground-water collection trench, pumping out the water and treating it in the existing water treatment facility at the plant. Approximately eight additional ground-water monitoring wells would be installed. Additional investigation of hydro-geologic conditions at the plant would also occur. **Cost: \$1.9 million.**

Alternative 4: Facility Perimeter Cutoff Wall. Under this alternative, a wall would be built in the ground around the plant to isolate the contaminated ground water. Five wells would be installed to pump the water to the surface for treatment. Additional investigation of hydrogeologic conditions at the plant would also occur. **Cost: \$3.7 million.**

Evaluating the Alternatives

U.S. EPA used the following nine criteria to evaluate each of the alternatives described in the Proposed Plan.

Evaluation tables (Figures 3-7) compare each alternative or set of alternatives against these criteria.

1. **Overall protection of human health and the environment** determines whether the alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering measures, or treatment.
2. **Compliance with Applicable or Relevant and Appropriate Require-**

ments (ARARs) evaluates whether the alternative meets Federal and State environmental statutes, regulations and other requirements that pertain to the site.

3. **Long-term Effectiveness and Permanence** considers the ability of the alternative to protect human health and the environment over time and the reliability of such protection, including the degree of certainty that the alternative will prove successful.

4. **Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment** evaluates the alternative's effectiveness in the reduction of the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5. **Short-term Effectiveness** considers the length of time needed to implement the alternative and the risks the alternative poses to workers, resi-

Figure 3. Upper River Sediment Evaluation Table

	Alternative 1 No Action	Alternative 2 Natural Recovery / Monitoring	Alternative 3-I 37% PCB Removal	Alternative 3-II 68% PCB Removal	Alternative 3-III 79% PCB Removal	Alternative 3-IV 85% PCB Removal	Recommended Alternative Alternative 3-IV-A 93% PCB Removal	Alternative 3-V 98% PCB Removal
Overall protection of human health and the environment								
Compliance with Applicable or Relevant & Appropriate Requirements (ARARs)								
Long-term Effectiveness and Permanence								
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment								
Short-term Effectiveness		N/A						
Implementability								
Cost	\$2.6 million	\$4.8 million	\$12.2 million	\$15.6 million	\$17.4 million	\$23.8 million	\$31.4 million	\$34.6 million
State Acceptance	The Wisconsin Department of Natural Resources has reviewed the components of the recommended alternative and acceptance is withheld until after the public comment period.							
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.							

Figure 4. Middle River Sediment Evaluation Table

	Alternative 1 No Action	Recommended Alternative Alternative 2 Monitoring
Overall protection of human health and the environment		
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)		
Long-term Effectiveness and Permanence		
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment		
Short-term Effectiveness		
Implementability		
Cost	\$0	\$1.8 million
State Acceptance	The Wisconsin Department of Natural Resources has reviewed the components of the recommended alternative and acceptance is withheld until after the public comment period.	
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.	

dents, and the environment during implementation.

6. **Implementability** considers the technical and administrative feasibility of implementing the alternative, such as the practicability and difficulty of construction, and the availability of goods and services.

7. **Cost** considers the estimated capital, operation and maintenance costs evaluated in the form of present worth costs. Present worth is the total cost of the alternative over time expressed in terms of today's dollars.

8. **State Acceptance** considers whether the WDNR agrees with U.S. EPA's analyses and recommendations of the studies and evaluations performed.

9. **Community Acceptance** will be addressed in the Record of Decision (ROD). The ROD will include a responsiveness summary, which presents public comments and U.S. EPA's responses to those comments. Acceptance of the recommended alternative will be evaluated after the public comment period.

Next Step

U.S. EPA will consider public comments received during the public comment period before choosing a final cleanup plan for the site. All comments received during the public comment period will be addressed in a Responsiveness Summary, which will be included in the ROD. The ROD is the document that will outline the final cleanup plan.

Figure 5. Lower River/Inner Harbor Sediment Evaluation Table

	<u>Alternative 1</u> No Action	<u>Alternative 2</u> Natural Recovery/ Monitoring	<u>Alternative 3</u> Inner Harbor Sediment Removal and Sediment Trap	<u>Alternative 4</u> Inner Harbor Sediment Capping	<u>Recommended Alternative</u> <u>Alternative 5</u> Inner Harbor Sediment Removal - Safe Navigational Depth	<u>Alternative 6</u> Inner Harbor Surface Sediment Removal	<u>Alternative 7</u> Inner Harbor Sediment Removal
Overall protection of human health and the environment							
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)							
Long-term Effectiveness and Permanence							
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment							
Short-term Effectiveness							
Implementability							
Cost	\$0	\$1.2 million	\$16.2 million	\$16.6 million	\$26.9 million	\$33.4 million	\$340.7 million
State Acceptance	The Wisconsin Department of Natural Resources has reviewed the components of the recommended alternative and acceptance is withheld until after the public comment period.						
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.						

Figure 6. Floodplain Soil Evaluation Table

	<u>Alternative 1</u> No Action	<u>Alternative 2</u> Bank Soil Stabilization	<u>Alternative 3</u> Removal of Soil with greater than 50 ppm PCBs	<u>Recommended Alternative</u> <u>Alternative 4</u> Removal of Soil with greater than 10 ppm PCBs
Overall protection of human health and the environment				
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)				
Long-term Effectiveness and Permanence				
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment				
Short-term Effectiveness				
Implementability				
Cost	\$0	\$700,000	\$2.1 million	\$5.2 million
State Acceptance	The Wisconsin Department of Natural Resources has reviewed the components of the recommended alternative and acceptance is withheld until after the public comment period.			
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.			

Figure 7. Ground Water Evaluation Table

	Alternative 1 No Action	Recommended Alternative Alternative 2 Investigation/Natural Attenuation/Source Identification and Control	Alternative 3 Collection Trench and Treatment	Alternative 4 Facility Perimeter Cutoff Wall
= Fully Meets Criteria				
= Partially Meets Criteria				
= Does Not Meet Criteria				
Overall protection of human health and the environment				
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)				
Long-term Effectiveness and Permanence				
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment				
Short-term Effectiveness				
Implementability				
Cost	\$0	\$600,000	\$1.9 million	\$3.7 million
State Acceptance	The Wisconsin Department of Natural Resources has reviewed the components of the recommended alternative and acceptance is withheld until after the public comment period.			
Community Acceptance	Community acceptance of the recommended alternative will be evaluated after the public comment period.			

For Additional Information

Anyone interested in learning more about the Proposed Plan for the Sheboygan River and Harbor site is encouraged to review the information repositories for the site located at the Mead Public Library, 710 North 8th Street, and the Sheboygan City Hall, 828 Center Avenue, 2nd Floor. An Administrative Record, which contains detailed information upon which the selection of the recommended alternative will be based, is also located at the Mead Public Library and at the U.S. EPA Region 5 office in Chicago. For further information about this Proposed Plan or the Sheboygan River and Harbor site, please contact:

U.S. EPA Contacts

Tom Short, SR-6J
Remedial Project Manager
 (312) 353-8826
 short.thomas@epa.gov

Susan Pastor, P-19J
**Community Involvement
 Coordinator**
 (312) 353-1325
 pastor.susan@epa.gov

U.S. EPA Region 5
 77 West Jackson Boulevard
 Chicago, IL 60604
 Toll Free: 1-800-621-8431
 http:www.epa.gov

State of Wisconsin

Tom Wentland
Project Manager
Wisconsin Dept. of Natural Resources
 4041 North Richards Street
 Milwaukee, WI 53212
 (414) 229-0853
 wentlt@dnr.state.wi.us

Henry Nehls-Lowe
Epidemiologist
Wisconsin Dept. of Health and Family Services
 1414 East Washington Avenue, Room 96
 Madison, WI 53703-3043
 (608) 266-3479
 nehls1@dhfs.state.wi.us

Mailing List Additions

If you did not receive this fact sheet in the mail, you are not on the mailing list for the Sheboygan River and Harbor Superfund Site. To add your name, or to make a correction, please fill out this form and mail it to:

Susan Pastor
U.S. EPA Region 5
Office of Public Affairs (P-19J)
77 West Jackson Boulevard
Chicago, Illinois 60604

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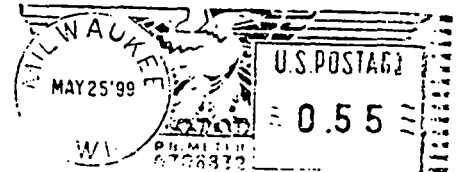
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Once you are on the mailing list, you will automatically receive information from U.S. EPA regarding the Sheboygan River and Harbor Site.



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77 West Jackson Boulevard
Chicago, Illinois 60604



FIRST CLASS

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TOM WENTLAND
WDNR
4041 N RICHARDS ST
MILWAUKEE WI 53212

Proposed Plan for Sheboygan River and Harbor Cleanup

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Community Involvement Coordinator
Office of Public Affairs (P-19J)
U.S. EPA - Region 5
77 W. Jackson Blvd.
Chicago, IL 60604