



East Chicago
WATERWAY MANAGEMENT DISTRICT

Sediment Cleanup Plan Proposed for East Chicago Waterways

June 2015

The East Chicago Waterway Management District (District), along with its partner, the U.S. Environmental Protection Agency are proposing a cleanup plan to address the contamination in portions of the Grand Calumet River, Indiana Harbor Canal and Lake George Canal in East Chicago, Indiana. The Grand Calumet River flows 13 miles through the heavily industrialized cities of Gary, East Chicago and Hammond before draining into Lake Michigan via the Indiana Harbor Canal. Currently, the vast majority of the river's water drains from the city, used by municipalities and industries alike.

Based on sediment testing in the river, six areas have been selected for cleanup (see Figure 1 on page 3): the junction of the east and west branches of the Grand Calumet River; Indiana Harbor Canal; and the east, middle, and west sections of the Lake George Canal.

Proposed cleanup alternatives

The four alternatives listed below were established as options to clean up the six areas discussed above.

Alternative 1: No action

A "no action" alternative is required to establish a baseline for comparison. Under this alternative, no action would be taken to clean up the waterways.

Alternative 2: Removal of contaminated sediment

In this alternative, contaminated sediment would be dredged hydraulically. Floating equipment would be used to remove and then transport sediment through a pipeline to a separate area allowing it to dry out. After it is dried out, the sediment would be transferred to an off-site landfill.

Alternative 3: Containment

This alternative involves using several types of capping materials to capture and impede the movement of contaminants. A containment cap or a multilayer reactive cap would be used depending on the specific

Your comments are needed

The District and EPA invite you to participate in the cleanup process at the East Chicago waterways. Your input helps determine the best course of action to clean up the waterways. A final cleanup plan will not be selected until after comments received from the public are reviewed. Your opinion is important to us! The proposed cleanup plan may be modified or changed based on new information or public comments. After all comments are received, the District and EPA will summarize and respond to the comments in a document called a "summary report." A fact sheet announcing the final cleanup plan will be placed in the information repository at the District office and posted on the District's website.

You may comment on the proposed cleanup plan from **June 15 to July 15**:

- Orally or in writing at the public meeting being held on **Thursday, June 25, 6 p.m.**, at the East Chicago Public Library, 2401 E. Columbus Drive.
- Fill out and mail the enclosed comment form, or submit it at the meeting.
- Send a fax or email to Fernando Treviño at 219-391-8401 or fmtconsulting@aol.com.

conditions of the area. Sand and other materials such as clay and activated carbon covered by a protective layer of gravel will act as a cap to isolate the sediment. This protective layer of gravel, also called an armor layer, could be used to prevent erosion. A multilayer reactive cap is composed of a containment cap with a layer of reactive material to contain both sediment and dissolved contaminants.

Alternative 4: Removal with containment This alternative would use a combination of dredging and disposal of some of the impacted sediment and then containment of the remaining sediment. Removal as

described in Alternative 2 would occur in areas where contaminant concentrations are too high or a steep slope would prevent a containment system to be installed. After dredging, a containment cap or multilayer reactive cap as described in Alternative 3 would be installed over the exposed area.

Evaluation of alternatives

The District and EPA are considering the four alternatives to clean up the different areas. Each option was evaluated against seven criteria (see Figure 2 on page 4 for an explanation of the criteria). The State and Community Acceptance criteria will be evaluated after the public comment period. The District has previously held two stakeholder meetings and will be hosting a public meeting on June 25 (see the front page for more information). Feedback from these meetings and the public comment period will be considered in the evaluation of the final cleanup plan.

A wide range of cleanup options were initially evaluated. The options that did not effectively protect people and the environment or were difficult to implement were eliminated from further consideration. Although Alternative 1 - No Action is found not to protect people and the environment it is listed here for comparison purposes only.

The alternatives listed below were kept because these alternatives provide the best balance of the criteria. They protect public health and the environment over the long term, comply with state and local regulations and are cost effective.

Grand Calumet River – East Branch

Alternative 2 does not meet the requirements because the petroleum pipelines under the exposure area prevent complete removal of the sediment. Alternative 3 meets the cleanup goals for the area without the additional sediment removal. It also requires less equipment than Alternative 4, making it easier to implement and less costly.

Summary of alternatives

Based on the evaluation above, the table below shows the preferred alternatives for each area.

	Grand Calumet River East	Grand Calumet River West	Indiana Harbor Canal	Lake George Canal East Section	Lake George Canal Middle Section	Lake George Canal West Section
Preferred Alternative	Alternative 3	Alternative 4	Alternative 4	Alternative 2	Alternative 3	Alternative 2
Action	Containment	Containment with Removal	Containment with Removal	Removal	Containment	Removal
Cost	\$6.2 million	\$9.9 million	\$15 million	\$8.2 million	\$9.7 million	\$11.8 million

Grand Calumet River – West Branch

Alternative 2 is not possible due to pipelines near the area that would prohibit using the dredging equipment in this area. Alternative 3 is not a good option because there is little room for a cap, which could cause flooding in the surrounding area. Alternative 4 would meet the cleanup goals for this area by effectively using a combination of dredging and removal of contaminated sediments.

Indiana Harbor Canal

Alternative 2 would be difficult because the bridges and pipelines complicate sediment removal. Alternative 3 would raise water levels and possibly cause flooding. Alternative 4 meets the cleanup goals for this area by effectively using a combination of dredging and removal of contaminated sediments.

Lake George Canal – East Section

Alternative 2 removes a larger amount of contaminated sediment than Alternative 4. It is effective for a longer amount of time and is easier to implement. Alternative 3 is not a good option because the contaminated sediment in this area is very fluid and would not support a containment cap.

Lake George Canal – Middle Section

Alternative 2 does not meet the requirements because the petroleum pipelines under the exposure area prevent completely removing the sediment. Alternative 3 reduces the toxicity and mobility of contaminants to the same extent as Alternative 4 at a lower cost and with less effort.

Lake George Canal – West Section

Alternative 2 removes a significant volume of contaminated sediment but at a lower cost than Alternative 4. Alternative 3 is not a good option because the contaminated sediment in this area is very fluid and would not support a containment cap.

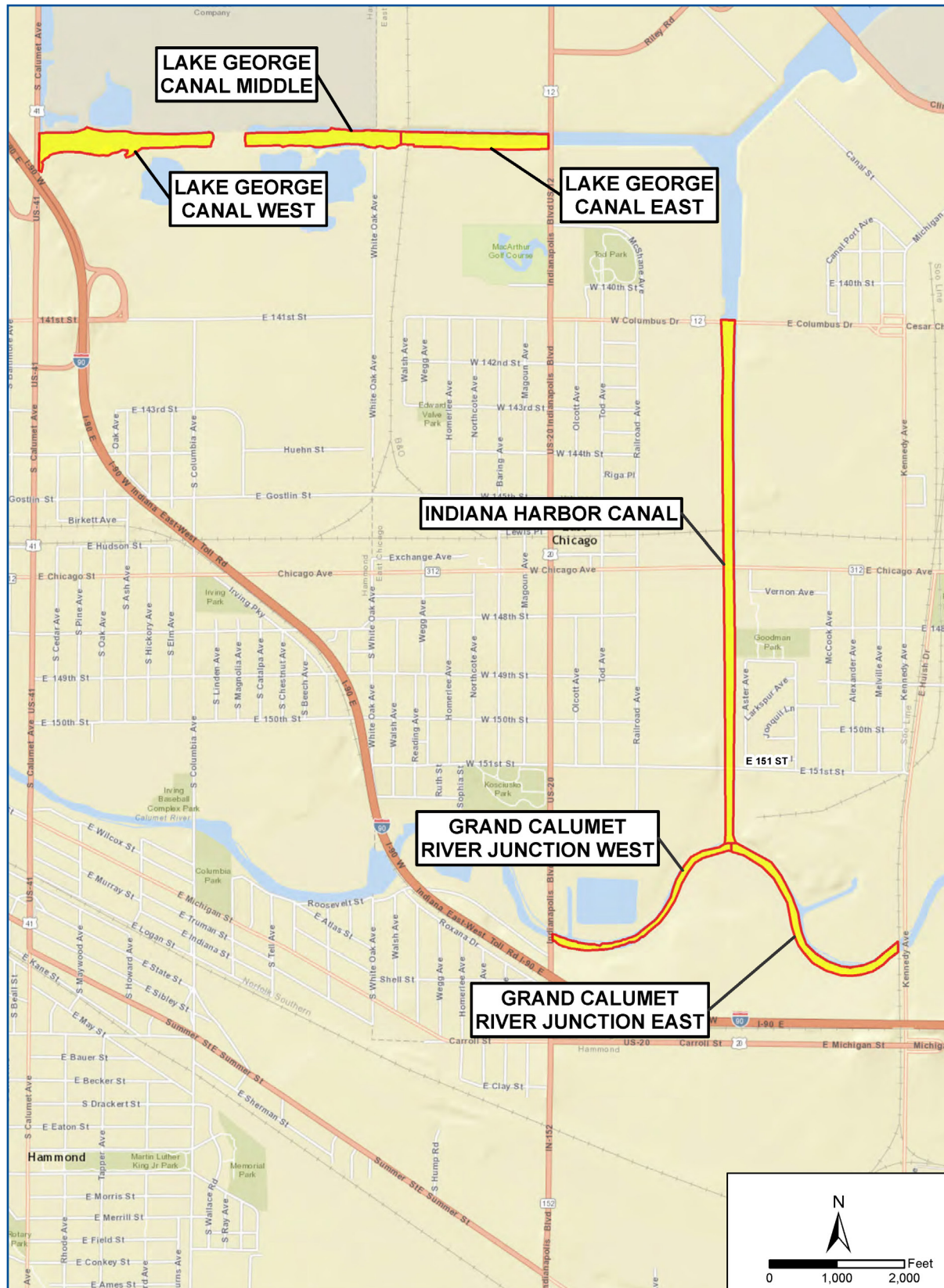


Figure 1 shows the six different areas being addressed in this proposed cleanup plan.

Figure 2. Evaluation Criteria

Using EPA guidelines, nine criteria are used to compare cleanup options:

1. **Overall protection of human health and the environment** addresses whether an alternative adequately protects both human health and the environment. The cleanup plan can meet this criterion by reducing or eliminating contaminants or by reducing exposures to them.
2. **Compliance with applicable or relevant and appropriate requirements** assures that each project complies with federal, tribal, state and local laws and regulations.
3. **Long-term effectiveness and permanence** evaluates how well an option will work in the long term, including how safely remaining contaminants can be managed.
4. **Reduction of toxicity, mobility or volume through treatment** addresses how well the option reduces the toxicity (the chemical makeup of a contaminant that makes it dangerous), movement and amount of contaminants.
5. **Short-term effectiveness** is how quickly the project achieves protection, as well as its potential to be harmful to human health and the environment while it's being constructed.
6. **Implementability** evaluates the technical feasibility of the cleanup plan, and whether materials and services are available to carry out the project.
7. **Cost** includes estimated capital or startup costs, such as the cost of buildings, treatment systems and monitoring wells. The criterion also considers costs to implement the plan, and operate and maintain it over time. Examples include laboratory analysis and personnel to operate equipment.
8. **State acceptance** is whether the state environmental agencies, in this case the Indiana Department of Environmental Management and the Department of Natural Resources, agree or disagree with the District's and EPA's recommended alternative(s).
9. **Community acceptance** evaluates how well the community near the site accepts the option. The District and EPA evaluate community acceptance after it receives and evaluates public comments on its recommended alternative.

For more information

You may review project-related documents at the District office or the East Chicago Public Library.

East Chicago Waterway Management District
444 Railroad Avenue
East Chicago

East Chicago Public Library
2401 Columbus Drive
East Chicago

If you need special accommodations at the meeting or have questions, contact:

Fernando Treviño
Executive Director
219-397-4362
fmtconsulting@aol.com

Documents are also available on the Web: www.in.gov/ecwmd/

For information on other sediment work in the Grand Calumet River visit www.greatlakesmud.org.