St. Louis River Area of Concern

U. S. Steel Duluth Works - Spirit Lake

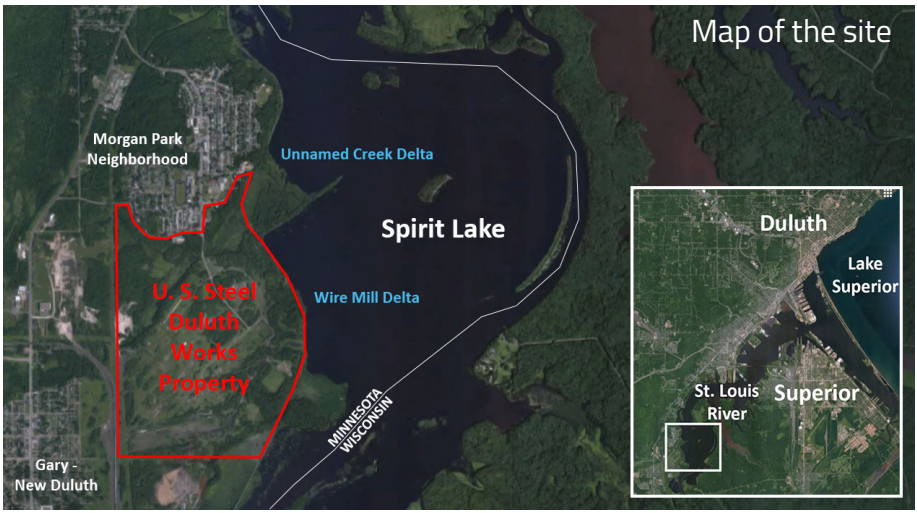
Cleanup Plan FAQs

Spirit Lake is a large, open area in the St. Louis River that has cultural, historical, and recreational significance to the surrounding communities.

Due to former industrial operations including U. S. Steel Duluth Works, the sediment in the western part of Spirit Lake is impacted with heavy metals and chemicals. Previous cleanup efforts on land have reduced the risk to public health and the environment, but contamination remains in the lake's sediment.

A voluntary cleanup plan under the Great Lakes Restoration Initiative's Legacy Act proposes to dredge and cap 2.65 million cubic yards of contaminated sediment to protect human health and the environment, allowing for safe use of the site in the future.

IISG-17-02 March 2017



CONTAMINATION IN THE SEDIMENT

1. Which contaminants are being addressed in the cleanup plan?

Contaminants targeted for the cleanup include PAHs, dioxins, lead, zinc, and copper.

2. Where did the contamination come from?

The contamination in the sediment came from historic industrial uses, including the former U. S. Steel Duluth Works plant. Many past industrial practices were widely accepted for decades prior to the enactment of the environmental regulations we know today.

3. Are there hazardous materials in the sediment that will need to be taken off-site?

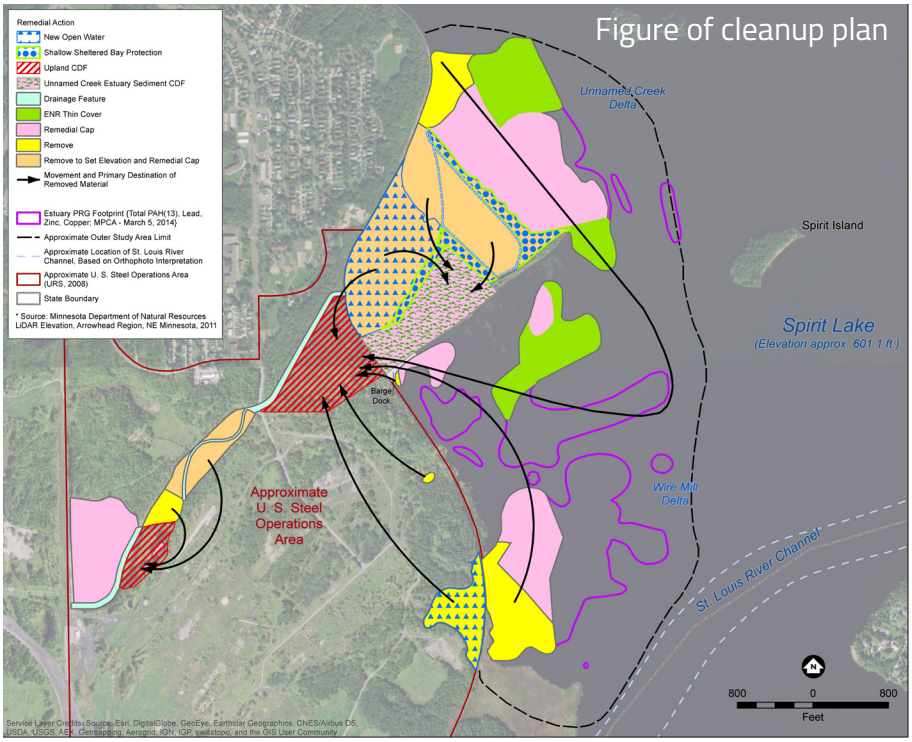
Some hazardous lead material will need to be stabilized and then hauled off-site, but that material makes up only about .01% of the total material to be remediated.

SEDIMENT CLEANUP PLAN

4. What is the cleanup plan?

The project team is designing a plan to dredge and cap 2.65 million cubic yards of sediment. The remedy will include placement of a thin cover and

monitored natural recovery. The plan will create an additional 30 acres of open water, removing contaminated sediment that has filled in the Wire Mill Pond area, Unnamed Creek Delta and associated wetlands. Some habitat in the cleanup area will be restored and should improve recreational opportunities, fish and waterfowl habitat, and species diversity.



5. When will the cleanup take place?

The cleanup is expected to begin in 2018 and will likely last two field seasons. A field season typically begins in late spring and continues into winter as long as weather conditions permit.

6. How was the cleanup plan chosen?

The cleanup plan was chosen from among a set of alternatives, or cleanup options, developed in the feasibility study. The alternatives were evaluated based on considerations like effectiveness in reducing contaminant levels, technical feasibility, and cost. Stakeholder input also played a role in creating a cleanup plan that addresses local concerns for the site.

Stakeholders providing input include:

- Fond du Lac Band
- U.S. Fish and Wildlife Service
- Minnesota Pollution Control Agency
- Minnesota Department of Natural Resources
- City of Duluth
- Minnesota Land Trust
- St. Louis River Alliance
- Morgan Park Community Club
- And more

7. What Tribal considerations have been made in the planning of this project?

The local Tribes have been consulted throughout the feasibility study, in accordance with requirements of Section 106 of the National Historic Preservation Act of 1966. Tribal input has been incorporated where possible and consultation will continue during design and implementation of the cleanup plan.

8. Why is wetland habitat being removed?

The sediment in the Wire Mill Delta and Unnamed Creek Delta is contaminated, creates low quality habitat for wildlife, and makes the area potentially unsafe for use by humans. Leaving contaminated wetlands in place does not meet the long-term habitat goals of the St. Louis River Area of Concern. Instead, the plan is to dredge and re-design these areas to create a mix of wetland, shallow water, and deeper water areas that support a diverse ecosystem.

9. Why will the Wire Mill Pond be enlarged?

The project will remove the contaminated sediment from the pond and the wetland areas surrounding the pond to restore the area to a condition similar to what existed prior to industrial activity at the site. This will create additional acreage of open water. Restoration of this area will attempt to maximize the ecological value of the pond and provide beneficial use to regionally important species.


Wire Mill Pond

10. Will the project remove the "spit of land" from Spirit Lake?

The project will not remove Slag Point from Spirit Lake. Removing this feature would not improve the protectiveness of the cleanup. In fact, keeping Slag Point aids in the creation of a shallow-sheltered bay, a beneficial habitat for the St. Louis River. The project team will design the sheltered bay to have the proper exchange of water for oxygen levels. The City of Duluth is also evaluating Slag Point for potential recreation-based development.

11. Can I still provide input on the cleanup plan?

Yes. You can review the cleanup plan documents at the locations listed and contact EPA's project manager (see page 12) with input. Consider that the earlier input is provided, the easier it is to incorporate, if appropriate.

Cleanup Plan Documents:

www.pca.state.mn.us/waste/st-louis-river-us-steel-superfund-site

Duluth Public Library
520 W Superior Street
Duluth, MN 55802

CONFINED DISPOSAL FACILITIES (CDFs)

12. What is a confined disposal facility?

A Confined Disposal Facility (CDF) is a structure that is specifically engineered to contain dredged material. A dike is built above the high water level and sediment is placed behind it. Once the CDF is full, it is capped on top to create a barrier. CDFs are typically located near urban areas on the water and can vary based on the needs of each site. CDFs can be an efficient and cost-effective way to dispose of large amounts of contaminated sediment.

13. Can humans safely recreate on or around CDFs?

Yes, the CDF cover contains soil and is usually topped with shallow-rooting grasses and plants. CDFs are safe for most types of outdoor recreation. Some CDFs around the Great Lakes have hiking and biking trails on them, while others have fishing piers installed if they are near the water.

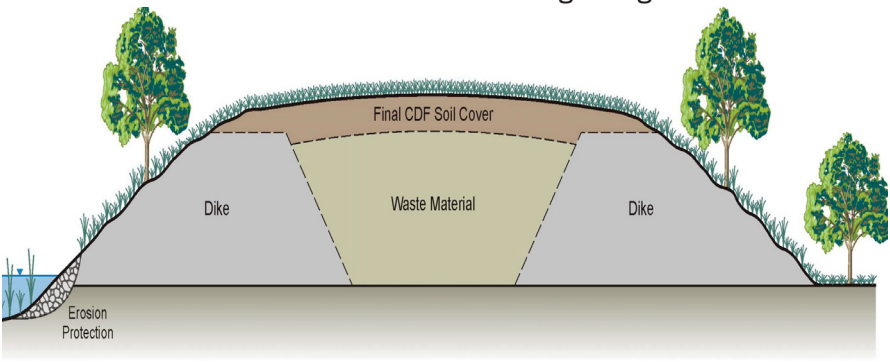
14. How can you ensure that water near the CDF is safe and the CDF will not release contamination?

Water quality monitoring tests around CDFs affirm that they are highly effective at containing sediment and any associated contaminants. Monitoring results must meet all state and federal water quality standards for any seepage, leachate, and discharge that may occur. The CDFs at Spirit Lake will be designed based on local geological features to withstand intense weather events. The design for the CDFs will consider proper dike heights, side slopes, and armor stone sizes to protect the integrity of the CDF. U. S. Steel will be required to monitor and maintain the CDF once construction is complete.

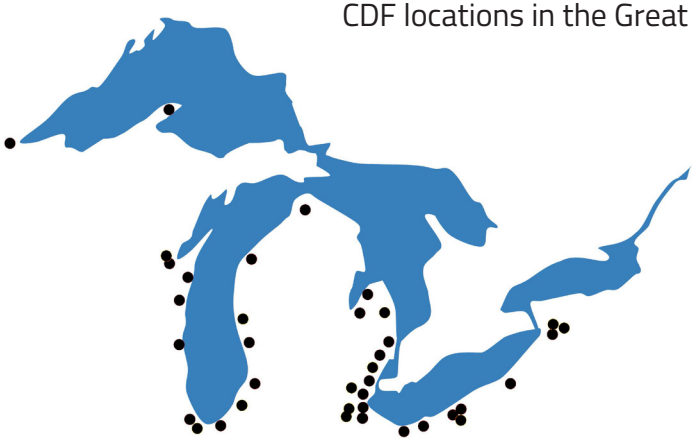
15. How will the cleanup plan hold up to extreme weather events like the one that happened in 2012?

Based on observed data from before and after the flood of 2012, the contaminated sediment in Spirit Lake was stable during the flood. The site is a net deposition basin, which means the contaminated sediment was covered with additional thickness of clean materials during the flood. Additional modeling confirms the stability of the sediment and the proposed CDF.

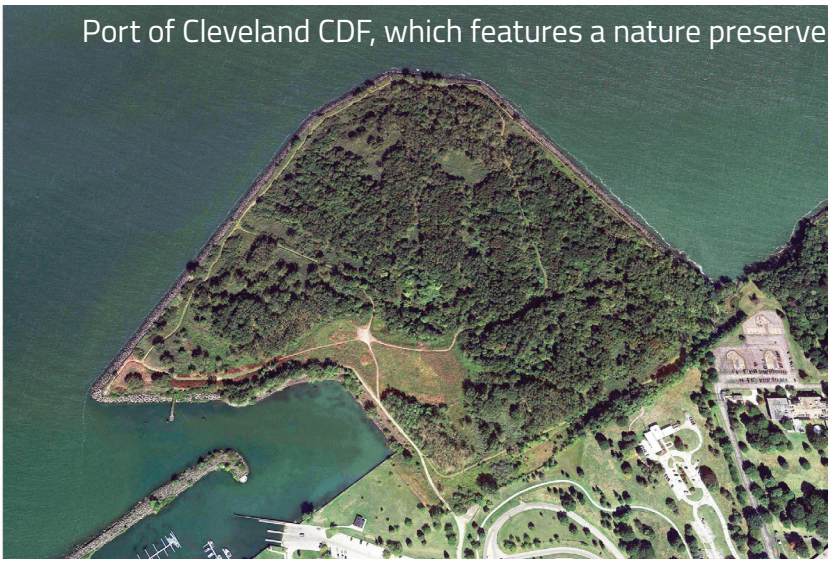
CDF cross-section integrating shoreline habitat



CDF locations in the Great Lakes



Port of Cleveland CDF, which features a nature preserve



16. Why isn't more of the contaminated sediment being placed on land instead of in a nearshore CDF?

There is not capacity in the CDFs planned in the upland area at the site. This possibility was investigated during the feasibility study but was determined to be unsuitable. A nearshore CDF and two new upland CDFs will be constructed to contain the dredged material.

17. Could the nearshore CDF provide additional habitat?

The CDFs will be designed to provide as much ecological habitat as possible without compromising their structural integrity. For example, they likely will not have large trees because of the risk of root penetration into the cap. Other measures will be taken to soften the shoreline, where possible.

WHAT TO EXPECT DURING THE CLEANUP

18. What is the anticipated daily schedule for in-water activities, such as dredging?

The details for daily operations will be determined during the design

Example of mechanical dredging


Example of loading sediment for transport

phase. Portions of the site may require 12 hour workdays, while some work in other areas may require 24 hour workdays to remain on schedule. Public input on the schedule will be considered, but generally shorter workdays mean a longer construction period.

19. What will be done to limit construction noise, light, or smells at the site?

Equipment like light blinders, mufflers, and muted backup alarms can be used to minimize noise and light disruptions. Work near homes in the Morgan Park neighborhood will be scheduled during the daytime whenever possible to reduce nighttime disturbances. Residents should expect some amount of disturbance during certain segments of the cleanup, but the project team is committed to keeping disturbances to a minimum.

20. How will the air and water quality be affected during the cleanup?

The health and safety of the community is a priority during the cleanup. Air quality and water quality will be monitored throughout the duration of the cleanup to ensure community safety. Containment measures like silt curtains are commonly used to prevent suspended sediment from washing downstream during dredging. Anywhere on land that contaminated sediment is processed will be lined. Strategies to reduce dust will also be incorporated.

21. How will the equipment access the site during construction?

Every effort will be made to minimize traffic disruptions on local road-

ways. The project team is currently determining the potential for an access road to the property directly from Grand Avenue. Other traffic may come from 88th Avenue. Truck traffic on local roadways will generally occur only when equipment or materials are being transported to or from the site.

22. What if local roads are damaged during construction?

The project team must follow City of Duluth and St. Louis County ordinances, which ensure that local roads are restored to their original condition. If damages to local roads occur, they will be repaired.

WHAT TO EXPECT AFTER THE CLEANUP

23. Will the wildlife come back when the cleanup is finished?

In the short-term, construction may cause fish and wildlife to temporarily find new homes, but they are expected to return to the site after the cleanup is finished. Their return may take some time, but most wildlife are resilient to this type of disturbance. The cleanup will allow them to occupy a clean and restored habitat.


Restoration improves wildlife habitat

24. Is the site going to allow for public access after the cleanup?

The former U. S. Steel Duluth Works site is seen as a key development location for many within the community. Multiple stakeholders are involved, providing input on the potential long-term uses for the site. Ultimately, future development decisions will be made by the landowner.

25. Will access to certain areas of the site be restricted after the cleanup?

Much of the site is private land owned by U. S. Steel and currently does not allow for public access. Some areas could become open to the public for activities like recreation in the future. The cleanup will be designed to allow safe and responsible use of the area.

26. What is going to happen to the historic railroad that runs through the property?

The future of the railroad will be determined by the City of Duluth, as they own the railroad tracks right of way. Regardless of their decision, there will be a temporary disruption to the rail service during the cleanup. Construction equipment will need to access the site from either side of the tracks.

FUNDING AND PARTNERSHIPS

27. How much will the cleanup cost?

The proposed cleanup is estimated to cost $69 million.

28. Who is paying for the contaminated sediment cleanup?

U. S. Steel has entered into a collaborative partnership with EPA under the Great Lakes Legacy Act to expedite sediment cleanup and perform habitat restoration. Under this voluntary agreement, U. S. Steel and EPA will be sharing the cost to clean up the estuary sediment in Spirit Lake. U. S. Steel is responsible for paying the total cost of any cleanup actions enforced by MPCA elsewhere on the site.

Restoration improves fish habitat

ST. LOUIS RIVER AREA OF CONCERN

The St. Louis River AOC is located in and around the cities of Duluth, MN and Superior, WI. It is made up of portions of the St. Louis River watershed, the Lake Superior South watershed, and the Nemadji River watershed. In 1987, the AOC was put on a list of 43 locations compromised by environmental degradation. In 2013, a Remedial Action Plan was developed to fix the AOC's environmental problems. The most significant problems identified were related to the presence of chemical contaminants in the sediments from the era prior to environmental regulation and the actual loss of fish and wildlife habitat. Cleaning up the contaminated sediment in Spirit Lake is one of many required actions in the Remedial Action Plan that when completed will ultimately lead to the removal of the AOC designation.

FOR MORE INFORMATION

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Visit www.greatlakesmud.org

SOME OUTREACH TEAM PARTNERS

Sea Grant

Minnesota Pollution Control Agency

The City of Duluth

Fond du Lac Reservation

Great Lakes Restoration

Protect, Restore and Enhance St. Louis River Alliance