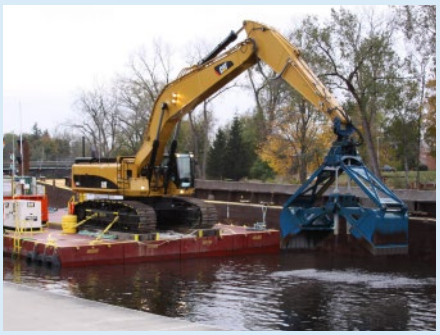
Hudson River
PCBs SUPERFUND SITE

Region 2: NJ, NY, PR, VI • 290 Broadway, New York, NY 10007

Phase 2 Dredging, Year 5 (2015)

Spring 2015

Highlights



In February 2002, the U.S. Environmental Protection Agency issued a Record of Decision that calls for dredging of approximately 2.65 million cubic yards (cy) of PCB-contaminated sediment from a 40-mile section of the Upper Hudson River between Fort Edward and Troy, New York ("the Remedial Action"). The cleanup has occurred in two phases and is being conducted by General Electric Company (GE) with EPA oversight. Phase 1 occurred in 2009 with the dredging of approximately 283,000 cy of PCB-contaminated sediment from a six-mile stretch of the Upper Hudson River near Fort Edward, New York. The second and final phase (Phase 2) began in June 2011 and includes the remainder of the targeted contaminated river sediment. To date, approximately 2.5 million cy of PCB-contaminated sediment has been dredged.

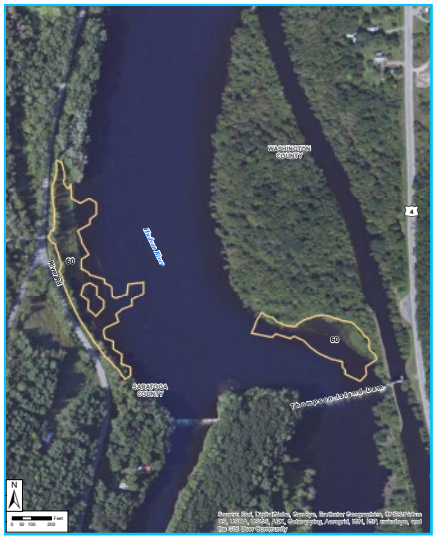
The 2015 season marks the sixth year of remedial dredging and is expected to be the last. Approximately 250,000 cy of PCB-contaminated sediment is targeted for removal in 2015. Several logistically challenging areas remain to be dredged this year, including those near dams and shallow areas around islands. As in 2014, dredging will also continue in a two-mile section of river near Fort Miller that is inaccessible by boat.

Habitat reconstruction will follow the completion of dredging and will continue into 2016. Once the last of the dredged material at GE's sediment processing facility located in Fort Edward has been transported off-site, the facility will be decommissioned in accordance with a decommissioning plan that is subject to approval by EPA.

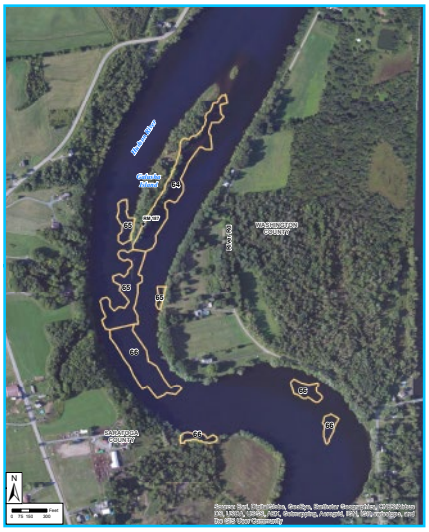
A long term Operation, Maintenance and Monitoring (OM&M) program will be undertaken to determine the effectiveness of the Remedial Action. The program will include long-term water quality monitoring, fish sampling, and cap monitoring, among other activities.

Where will Dredging be Done in 2015?

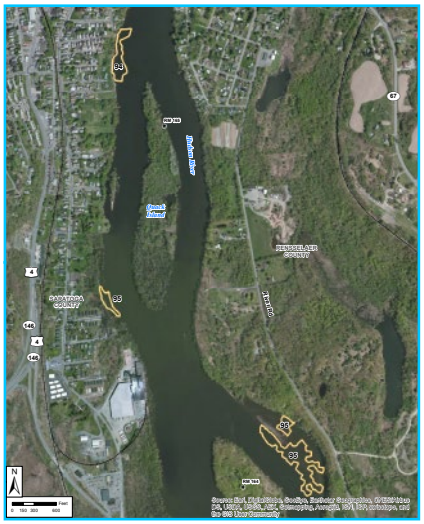
In 2015, 250,000 cy of sediment is targeted for removal. Several areas will need to be dredged that are logistically challenging, including shallow areas behind islands, areas near dams, and the "land-locked" section of river located between the Thompson Island Dam and Fort Miller Dam. Dredging occurs in areas of approximately five acres each, called "Certification Units" (CUs). The areas to be dredged during the 2015 season are:



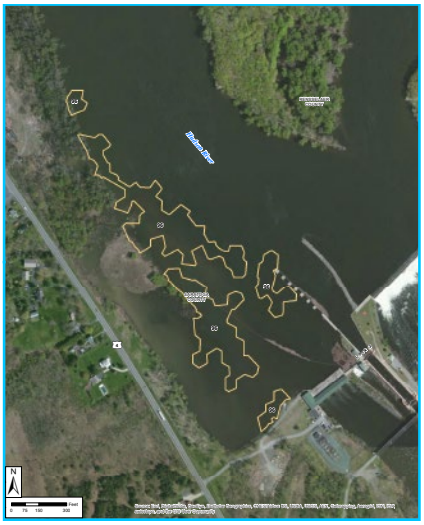
CU 60, directly north of Thompson Island Dam: This area will require the use of a land-based approach to some dredging, due to its proximity to the dam.



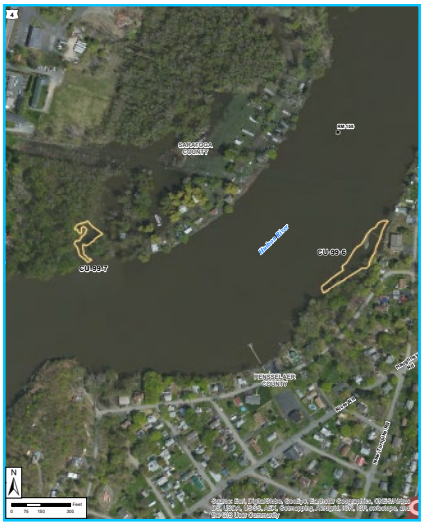
CUs 64, 65, and 66, in the land-locked section of the river: Dredging of these areas began in 2014 and will be completed this year.



CUs 94 and 95, near Quack Island above Lock 2: Dredging in these shallow areas will require special methods and is affected by the presence of sensitive wildlife.



CU 96, directly north of Lock 2 on the west side of the river: This area requires consideration and monitoring of cultural resources impacts.



CU 99, in a cove near Kelts Grove in Waterford: This area requires consideration and monitoring of cultural resources impacts.

Dredging is conducted when the Champlain Canal is open for the season, typically between May and November. Dredging occurs twenty-four hours a day, six days a week. Three to five mechanical dredges are used to remove sediment from the river bottom. Dredges mounted on deck barges use environmental clamshell buckets to place dredged sediments into barges.

In the area near the Thompson Island Dam that is unsafe to access by boat (CU 60), dredging will be done from land and a trans-loading station will be used to transfer dredged materials into barges. Tugboats will push the filled barges to the dewatering and sediment processing facility located in Fort Edward, New York.

In the land-locked section of river (CU 64, 65, 66), where direct water-transport of loaded barges to the processing facility isn't possible due to the presence of dams at its north and south ends, loaded barges will be pushed by tugboat to a trans-loading station on a narrow section of land on the east shoreline of the river, south of the Thompson Island Dam. Once there, the material in the barge will be off-loaded into a bin on land and then re-loaded into another barge in the Champlain Canal "land-cut." From there the barges will be pushed by tugboat upriver to the Fort Edward processing facility.

Once at the processing facility, the most contaminated sediment is processed first. Debris is removed and sediment is mechanically dewatered; the water is treated on-site and then returned to the Champlain Canal. The dewatered sediment and debris are loaded onto railcars for transport to permitted out-of-state disposal facilities.

Following dredging, "backfill" composed of clean sand and gravel is placed over previously dredged areas, stone and gravel caps are placed if needed and habitat is reconstructed.

How is the Dredging Monitored?

Dredging and processing operations, both in-river and at project support facilities, are continually monitored and evaluated to determine if changes are needed to improve operations. Three engineering performance standards have been established to protect water intakes and the environment: resuspension (transport of PCBs down the river); residuals (PCBs left behind); and productivity (efficient completion of the project). Five quality of life performance standards were also developed (air quality, noise, lighting, odor, and navigation) to minimize the impacts of dredging on people, businesses and communities. The monitoring is re-evaluated and adjusted as needed as dredging operations move throughout the river.

The resuspension standard for the project uses the Federal Safe Drinking Water standard of 500 parts per trillion (ppt) for PCBs in the river. Compliance with the standard is monitored through an extensive river water quality monitoring program at upstream, near-field (within 300 meters downstream of dredging), and at far-field (greater than 2 miles downstream of dredging) locations. When resuspension or other performance standards are not met, GE is required to conduct evaluations and adjust dredging operations, as needed. Air monitoring also occurs 24/7 during dredge operations. For quality of life issues such as odor, noise or lighting, monitoring occurs regularly and in response to complaints. GE is required to take action, as needed, to address any issues or complaints.

The monitoring program also includes regular fish sampling to assess levels of PCBs within various fish species, and habitat restoration related to aquatic and wetland plants.

When will Dredging be Completed?

The dredging required by the EPA's Record of Decision is expected to be completed in 2015, with habitat reconstruction activities extending into 2016. Once dredging is complete, the processing facility and any associated support properties will be decommissioned in accordance with project requirements, including the 2002 Record of Decision.

What Happens after Dredging?

Completion of Remedial Action

Once the facility is decommissioned and the required project reports are completed and approved by the EPA, the Remedial Action work will be considered complete and the Operation Maintenance and Monitoring (OM&M) phase of the project will begin. The EPA will also conduct five-year reviews of the project.

Operation, Maintenance and Monitoring Program

The OM&M program is conducted to monitor the ongoing recovery of the river and the effectiveness of the remedial action over time. The program includes the following components:

Water Column Monitoring:

Water column monitoring will continue in order to assess PCB concentration levels throughout the Upper and Lower Hudson River and to monitor the PCB transport from the Upper Hudson River to the Lower Hudson River. Upper Hudson sampling will occur weekly for at least three years, at which time the EPA will determine if modifications to the OM&M water column monitoring program are necessary.

In addition, water flows will continue to be monitored routinely. If a high-flow event is triggered (as monitored at both Fort Edward and Waterford U.S. Geological Survey gauges), additional monitoring will occur to asses PCB concentrations associated with the high-flow event.

Fish Monitoring:

Fish monitoring will continue to be performed during the OM&M program to assess PCB concentration levels within various fish species throughout the Upper and Lower Hudson River. Also, additional fish samples will be collected at various locations throughout the Lower Hudson River to assist the New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) in setting annual fish consumption advisories for the Hudson River. This monitoring program will continue for at least three years, at which time the EPA will determine if modifications are necessary.

Habitat Monitoring:

The Habitat OM&M program begins immediately after planting is completed in each CU, and generally consists of two phases: a benchmark evaluation phase and a success criteria evaluation phase. The benchmark evaluation will be conducted for approximately five years and is intended to monitor progress of initial plantings and natural recolonization. Data will be collected from both dredged and non-dredged locations, and individual habitat areas will be compared to specified reference areas. The success criteria evaluation will compare each river reach to reference areas for each habitat type.

Cap Monitoring:

Following completion of the Remedial Action, monitoring will continue to be conducted to assess the long-term effectiveness of the caps that were placed on the river bottom to isolate small amounts of PCBs that remained after dredging. Surveys will be conducted five and ten years following the completion of the Remedial Action, and will continue at ten-year intervals in perpetuity. Surveys may also take place after high flow events. Sediment sampling will also occur in specified locations over time to monitor the potential for PCB migration.

Five-Year Review

Under the Superfund law, five-year reviews are required when hazardous substances, pollutants or contaminants remain at a site that would not allow for unrestricted use. The purpose of the five-year review is to ensure that implemented remedial actions are working as intended and are protective of human health and the environment. The first five-year review for the Hudson River dredging project occurred in 2012 and concluded that the cleanup is meeting, or is expected to meet, the goals that were set by the EPA for the project. The next five-year review is expected to be completed by April 2017.

Performance standard monitoring data is available on the EPA's Hudson Dredging Data web site: www.hudsondredgingdata.com

For More Information

For more information, visit*, call toll-free, or write to the Hudson River Field Office at the address below. More information about the Hudson River PCBs Superfund site is also available online: www.epa.gov/hudson.

EPA Contacts:

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**The Field Office hours are Monday - Friday, 8:00 am - 4:30 pm, with evening hours by appointment. River residents with specific concerns relating to dredging activities when work is being performed should call GE's dedicated 24-hour phone line at (518) 792-4087 or (888) 596-3655.*

Regional Public Liaison:
If you would like information on general environmental concerns or the federal Superfund hazardous waste program, have concerns or complaints about the Superfund program, or if you seek assistance in resolving site-specific issues that were not fully addressed by the EPA, please contact: George Zachos, U.S. EPA, Regional Public Liaison, (732) 321-6621, zachos.george@epa.gov, or toll free at (888) 283-7626.

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