



## Background

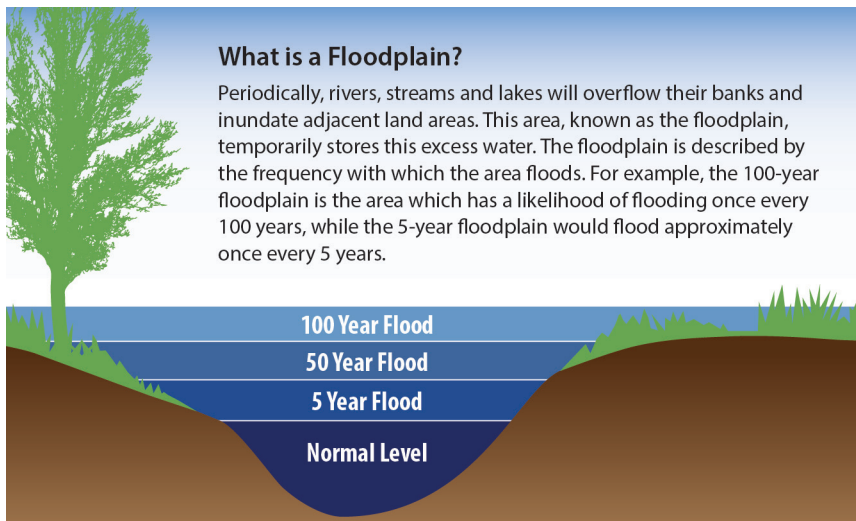
The Upper Hudson River has been contaminated with polychlorinated biphenyls (PCBs) as a result of industrial discharges that primarily occurred between the 1940s and 1970s. PCBs were discharged to the river from the General Electric (GE) manufacturing plants in Hudson Falls and Fort Edward, NY and were subsequently transported downstream. Once PCBs entered the river, they were mixed with water, sediments and wood debris. During flooding, contaminated sediment and wood debris from the river was deposited in the floodplain.

In February 2002, the U.S. Environmental Protection Agency issued a Record of Decision (ROD) which called for targeted environmental dredging to remove PCB-contaminated sediment from a 40-mile section of the Upper Hudson River between Fort Edward and Troy, NY. Dredging was conducted from spring 2009 through fall 2015. Monitoring is now underway to track the long-term recovery of the river over time.

The 2002 ROD also stated that concerns related to the possible exposure of residents and ecological receptors (plants and animals) to PCBs in the floodplain must be evaluated. The Upper Hudson River floodplain is included as part of the Hudson River PCBs Superfund site, but it is being evaluated separately from the river dredging component.

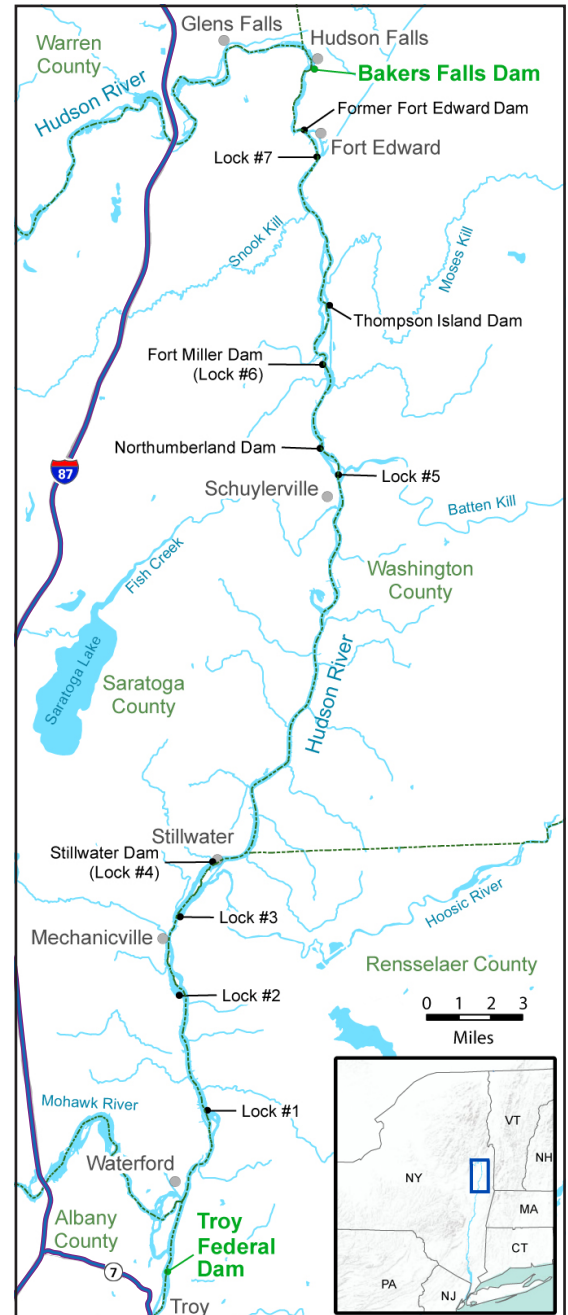
In October 2014, the EPA announced that GE would conduct a comprehensive investigation of PCB contamination in the floodplain of the Upper Hudson River. The primary objective of this study, called a Remedial Investigation and Feasibility Study (RI/FS), is to determine the nature and extent of contamination, identify potential ecological and human health risks, and evaluate options for cleaning up the site.

To date, over 7,500 soil samples have been collected in the Upper Hudson River floodplain by various state/federal agencies and GE. Results from this sampling show that, generally, PCB levels are greater in soil in more frequently flooded areas close to the river and decrease further away from the river. PCB levels also generally decrease with increasing distance downstream. The investigation work will be conducted by GE with oversight by the EPA.



### What is a Floodplain?

Periodically, rivers, streams and lakes will overflow their banks and inundate adjacent land areas. This area, known as the floodplain, temporarily stores this excess water. The floodplain is described by the frequency with which the area floods. For example, the 100-year floodplain is the area which has a likelihood of flooding once every 100 years, while the 5-year floodplain would flood approximately once every 5 years.



**Floodplain Study Area** – The study area includes 43 miles of the Upper Hudson River floodplain beginning at the base of Bakers Falls in Hudson Falls, NY and ending at the Federal Dam in Troy, NY. The floodplain includes the area which has a likelihood of flooding once every 100 years.

## Remedial Investigation/Feasibility Study (RI/FS) Overview

The purpose of the RI/FS for the Upper Hudson River floodplain is to determine the nature and extent of PCB contamination in the floodplain, assess the risk that the contamination poses to human health and the environment, and evaluate potential cleanup alternatives. The RI/FS is being conducted in accordance with EPA's guidance documents for conducting remedial investigations and feasibility studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund.

### Remedial Investigation (RI):

The goal of the floodplain RI is to determine where PCBs are present and at what concentrations. Data will be collected throughout the RI and used in conjunction with existing data to refine EPA's understanding of the distribution of PCBs in the Upper Hudson River floodplain. The data will be used to conduct the human health and ecological risk assessments. These assessments are used to evaluate the risk of exposure to PCBs to both humans and ecological receptors (plants and animals).

### Feasibility Study (FS):

The data collected and analyzed during the RI will be used to develop and evaluate different cleanup alternatives to reduce the exposure risk to people and wildlife.

### Next Steps:

The RI/FS for the Upper Hudson River floodplain is underway. Following the completion of the RI/FS, the EPA will issue a Proposed Plan which will describe the EPA's preferred cleanup option, and discuss other options considered. After the public has an opportunity to provide input on the Proposed Plan, EPA will issue a Record of Decision selecting the cleanup action for the site.

## What is a Risk Assessment?

The RI will include a Human Health Risk Assessment and an Ecological Risk Assessment. These assessments are conducted to evaluate potential risks associated with exposure to PCBs. The risk assessments will be conducted in multiple phases. Each phase of the evaluation provides a more detailed estimate of current and potential future risks.

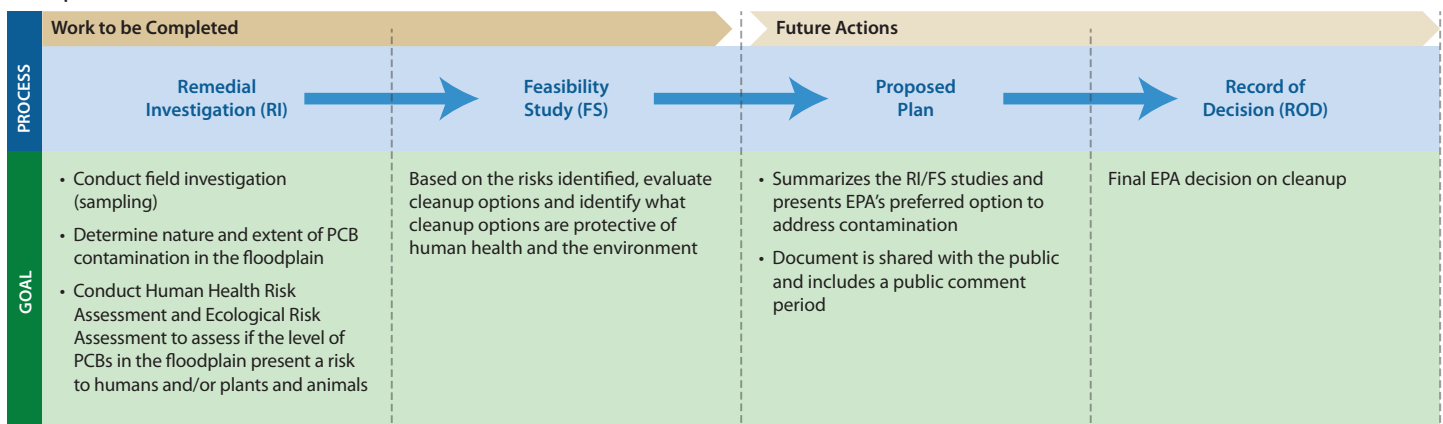
### Human Health Risk Assessment (HHRA):

The primary purpose of the HHRA is to provide risk managers and the community with an understanding of the potential human health risks posed by the site in the absence of any cleanup, removal action or institutional controls. The HHRA evaluates both the cancer risks and non-cancer risks to human health from on-site PCBs. The risk to human health will be evaluated on individual properties considering the use of the property.

### Ecological Risk Assessment (ERA):

The ERA identifies impacts to wildlife from exposure to PCBs. The ERA will assess the risks to both land-based and water-based organisms exposed to PCBs.

### The Superfund Process



## RI/FS Sampling

Data will be collected during the multi-year RI/FS. Anticipated sampling needs will include the following:

### Soil Sampling:

Soil sampling will be conducted throughout the RI/FS study area. Sample locations will be selected based on the likelihood that PCBs are present due to frequency of flooding, location along the river, and how the area floods. Depending on the location and characteristics of the property, GE may contact a property owner to conduct soil, sediment or biota (plant and animal) sampling on his or her property. Multiple visits to a property may be needed to thoroughly evaluate the possible presence of PCBs.

Samples will be collected using hand tools (such as a hand auger) that may create an approximately 2-inch diameter hole. After each sample is taken, the hole is filled in. PCBs near the surface generally represent the greatest potential risk to human health and the environment, therefore most soil samples will be collected in the top 12 inches. Some deeper samples will also be collected. People could potentially come in contact with PCB-contaminated soil during gardening, yard improvements, recreational activities, etc.

Sampling of sediment deposited during flooding events (flood mud) has been conducted in the past and is ongoing. The results of this sampling indicate that PCB concentrations in this newly deposited sediment are generally low.

### Sediment Sampling:

Sediment samples will be collected from areas within the study area that typically have standing water. These samples (typically a core sample) will be collected using sediment sampling equipment from a small boat or by wading.

### Biota Sampling:

The potential need for sampling of biological organisms will be determined later in the RI.



## Short-term Response Actions:

Prior to the completion of the multi-year study, actions will be taken as necessary to address immediate threats to human health. In the past, in the Upper Hudson River floodplain, these actions have primarily consisted of the installation of topsoil and grass cover material to prevent direct contact with PCBs. Signs to warn people that PCBs are present have been placed in less frequently used areas. These actions are considered temporary.





## What are PCBs?

PCBs are a group of chemicals consisting of 209 individual compounds known as congeners. PCBs were sold in mixtures containing dozens of congeners. These commercial mixtures were known in the U.S. as Aroclors. PCBs were widely used as a fire preventive and insulator in the manufacture of electrical transformers and capacitors because of their exceptional ability to withstand degradation at high temperatures. At the concentrations detected in the soil, sediment and fish, people are unlikely to be aware of PCBs by their smell or taste. PCB production was banned by the United States Congress in 1979. PCBs are classified by EPA as probable human carcinogens and are linked to other adverse health effects such as developmental effects, reduced birth weights and reduced ability to fight infection. More EPA information about PCBs is available at <https://www.epa.gov/pcb>.



## How To Stay Involved

During the RI/FS process, the EPA will hold community meetings at various milestones. Fact sheets will also be prepared periodically to provide project updates.

Additionally, the Hudson River PCBs Site Community Advisory Group (CAG) meets several times a year in various locations near the Upper Hudson River. CAG meetings are open to the public and are an opportunity to learn more about different aspects of the Hudson River Superfund Project. More information about the Hudson River CAG and information about future meetings is available on their webpage: [www.hudsoncag.ene.com](http://www.hudsoncag.ene.com).

To stay informed about the Hudson River PCBs site and receive the latest news and updates you can also sign up for the EPA's Hudson River PCBs site email Listserve. To join the email group, send an email to [romanowski.larisa@epa.gov](mailto:romanowski.larisa@epa.gov).


More detailed information about how EPA will share information and receive input from the public will be presented in a comprehensive Community Involvement Plan (CIP) for the floodplain investigation work. The CIP is expected to be available on the EPA's Hudson River webpage ([www.epa.gov/hudson](http://www.epa.gov/hudson)) by fall 2016.


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## For More Information

For more information, visit, call toll-free, or write to the EPA Region 2 Hudson River Office at the address below. More information about the Hudson River PCBs Superfund site is also available online: [www.epa.gov/hudson](http://www.epa.gov/hudson).

## EPA Contacts:

 **Gary Klawinski, Project Director**  
 EPA Region 2 Hudson River Office  
 187 Wolf Road, Suite 303, Albany, NY 12205  
 (518) 407-0400 or (866) 615-6490 Toll-Free  
[EPAHRFO@outlook.com](mailto:EPAHRFO@outlook.com)

 **Larisa Romanowski, Community Involvement Coordinator**  
 EPA Region 2 Hudson River Office  
 187 Wolf Road, Suite 303, Albany, NY 12205  
 (518) 407-0400 or (866) 615-6490 Toll-Free  
[EPAHRFO@outlook.com](mailto:EPAHRFO@outlook.com)

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## 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](mailto:zachos.george@epa.gov), or toll free at (888) 283-7626.