

**Community Advisory Group (CAG) Meeting**  
**Hudson River PCBs Superfund Site**  
**Meeting Summary**  
**Thursday October 1, 2015**  
**1:00 PM – 5:30 PM**  
**Administration Building, Gideon Putnam Room**  
**Saratoga Spa State Park**

**CAG Members and Alternates Attending:** David Adams, Rich Elder, Peter Goutas, Manna Jo Greene, Gil Hawkins, Timothy Holmes, Abigail Jones, Jeffrey Kellogg, Roland Mann, David Mathis, Althea Mullarkey, Thomas Richardson, Andrew Squire, Lois Squire, Julie Stokes.

**CAG Liaisons Attending:** Bridget Boyd (NYSDOH), Amy Bracewell (NPS), Thomas Brosnan (NOAA), Michael Cheplowitz (USEPA – Region 2), John Davis (NYSAG), Kevin Farrar (NYSDEC), David King (USEPA – Region 2), Gary Klawinski (USEPA – Region 2), David Kluesner (USEPA – Region 2), Jeremy Magliaro (NYSAG), Chris Martin (NPS), Larisa Romanowski (USEPA – Region 2), Lisa Rosman (NOAA).

**Others Attending:** Charlene Adams (Charleton), Lou Ann Brennan (Scenic Hudson), James Candiloro (NYSCC), Layne Darfler (Washington County), Ryan Downs (Sierra Club), Garry Erd (Laborers Local 190), Maria Gallucci (International Business Time), Audrey van Genechten (NYSDOH), Allen Goldhammer (Esopus NY), Marc Greenberg (EPA), Jill Grygas, Dana Gulley (Riverkeeper), Dan Harrison (Hudson River Fisherman Association) Kathryn Jahn (FWS/DOI), Ed Jenkins, Regina Keenan (NYSDOH), Bill Kotas, Jane Kriegler, Laura Labbe, George Lamure (Laborers Local 190), Susan Lawrence (Sierra Club), George Lukert (E&E), Dan Lundquist (Riverkeeper), Max Martin (E&E), Kim Mooers (Scenic Hudson), Elizabeth Moran (Environmental Advocates of NY), Walter Mugden (EPA), Brian Nearing (Albany Times), Patrick Nelson, Margaret Poyure (USFWS), Gillian Prater-Lee, Steve Pucicco (Groundwork Hudson), Daniel Raichel (NRDC), Joe Rappaport (Campaign for a Cleaner Hudson), Christine Roberts, Sharon Ruggi (Fort Edward), Mark Sergott (NYSDOH), Jerry Silverman (Bloomberg BNA), Corina Singleman (CUNY), Sacha Spector (Scenic Hudson), Ned Sullivan (Scenic Hudson), Barbara Thomas (Resident), Scott Waldman (Politico), Julia Wilson (Fort Edward).

**Facilitators:** Ona Ferguson, Pat Field, Eric J. Roberts.

**Members Absent:** Cecil Corbin-Mark, Chris DeBolt, Laura De Gaetano, Darlene DeVoe, Richard Fuller, Brian Gilchrist, Robert Goldman, Robert Goldstein, Timothy Havens, Richard Kidwell, Edward Kinowski, William Koebbeman, Aaron Mair, Merrillyn Pulver-Moulthrop.

**Action Items**

*CBI*

- Collect and distribute comments on the draft August 2015 meeting summary via email.

*EPA*

- For future progress updates, create and distribute a list of the completed CU Construction Completion Certifications, and steps completed in the process to advance the Certification of Completion of Remedial Action and the Certification of Completion of Work.

## **Welcome, Introductions, August 2015 Meeting Summary**

The facilitators welcomed the group, led a round of introductions, and reviewed the agenda. Given high turnout and interest in this meeting, the agenda was revised to include a public comment period. A draft of the August 2015 meeting summary was distributed in hard copy. Because it had not been circulated previously, the facilitators agreed to ask for feedback via email from CAG members and alternates and, if no revisions were received, CAG members agreed that the summary would be considered final.

CAG meeting handouts and presentations are available on the project website:  
<http://www.hudsoncag.ene.com/documents.htm>.

## **Dredging Project Update**

Gary Klawinski, EPA, provided an update on the dredging project. His points are summarized below (See presentation available on the project website for additional details).

*Project to Date* – To date, the project has removed 2.76 million cubic yards of sediment. The Record of Decision (ROD) estimated the project would remove 150,000 pounds of PCBs during the project. Approximately 310,000 pounds of PCBs have been removed over the course of the project.

*Dredging in 2015* – Dredging in 2015 was completed in River Sections 1, 2, and 3 and an additional area will be dredged in the Fort Edward Yacht Basin. Dredging in CU 95 is complete, though shallow conditions and the presence of sensitive wildlife complicated dredging. An additional area comprising 13,000 cubic yards (cy) near the Fort Edward Yacht Basin remains to be dredged to a depth that allows for large boats to easily navigate the area. Reference to this area was made in the 2012 Five Year Review. The season's dredging should be finished the week of October 5. Backfilling in dredged areas will continue into November.

*2015 Monitoring* – No air or water quality monitoring exceedances were recorded during the reporting period.

*2015 Habitat Planting* – The team planted approximately 4 acres of submerged aquatic vegetation (SAV) and 3.6 acres of riverine fringing wetland (RFW) plants. Planting will continue in 2016.

*Support facility and equipment decontamination and demobilization* - GE is cleaning equipment that is no longer needed. Large barges and dredges are still on site. Some small equipment has been moved off site. The north wharf is on site and disassembled for cleaning.

CAG member discussion related to the project update focused on the following:

*Quantity of PCBs Removed and Additional Dredging:* A member thanked GE in absentia for going beyond the requirements and dredging the yacht basin. Considering that GE removed nearly double the amount of PCBs estimated in the ROD, the member also asked how many pounds of PCBs might have been left behind in areas of the river that were not targeted for dredging. Mr. Klawinski responded that the amount removed is double the ROD estimate because some areas required deeper dredging than anticipated (caused primarily by the presence of woody debris) and a more efficient process was

established for Phase 2 based on lessons learned in Phase 1. He clarified that the material in the yacht basin contains some PCBs but not enough to meet the dredging criteria. Dredging the area will improve navigation access in the area. The member urged EPA to consider reviewing and dredging other areas of concern identified by agencies. In response to a question, Mr. Klawinski said they do not expect to remove more sediment at the yacht basin than currently planned. However, some additional material may need to be removed to access to the area.

A member asked EPA to describe the process for selecting the additional dredging area in the yacht basin since it was not included in the ROD. The member suggested that if there is a protocol to select areas for additional dredging, then dredging of additional contaminated areas might be possible. Mr. Klawinski said the New York State Canal Corporation (NYSCC) had sampled the area and, in coordination with a municipality, requested that EPA review the new data. The area in question was included in the 2012 Five Year Review and EPA used this data in part to determine the area to be dredged.

*Concerns at a specific property:* A CAG alternate commented that EPA and GE had not addressed concerns he raised about his property, which he said was negatively affected by dredging. Mr. Klawinski said he visited the property and reviewed the concern in detail with the CAG member. Based on EPA's understanding of the concern and a technical review, EPA determined that the concern raised was not project related. Another member expressed disappointment that community members' concerns are not being addressed.

*Five-year policy review request and last dredging update:* Members requested that EPA complete a 5-year Policy Review before demobilizing the dewatering facility. A member noted that this dredging update is the last update that will occur during active dredging. The member said she had hoped this last update would include a review of how close the project is to achieving the ROD's objectives.

## **Next Steps and Upcoming Project Activities**

Gary Klawinski, EPA, described next steps and upcoming activities, including completion of project certification forms, habitat reconstruction, facility demobilization and restoration, approval of the remedial action certification of completion, and operations, maintenance, and monitoring (OM&M). His points are summarized below (See presentation available on the project website for additional detail).

*Certification forms for 2015/2016* – EPA will review a package of documents for each CU that is completed. The package contains three forms: one for dredging, one for backfilling, and one for habitat reconstruction.

*Habitat reconstruction* – Areas backfilled in 2015 will be reconstructed beginning in May or June 2016. Reconstruction also includes revisiting dredged sites to ensure the shorelines are stable.

*Remedial Action Certification of Completion* – After receiving all required documentation from GE, including the facility decommissioning plan, EPA, New York State, and the Trustees will inspect the sites to confirm the work is complete. Issuing the Certification of Completion will document that GE met the requirements for remedial actions.

*Operations, Maintenance, and Monitoring (OM&M)* – OM&M, which is part of the remedy, will

focus on the caps, habitat, fish, and water column and sediment monitoring. Caps will be surveyed at 1, 5, and 10 years after construction. Large flood events can trigger cap review, and repairs may be required. Habitat will be monitored following established benchmarks and success criteria. Fish monitoring will continue into the foreseeable future. EPA will review the data in regard to the metrics established for the targets and remedial goal. Water column monitoring will continue and additional sediment sampling will be done.

CAG member discussion of the next steps and upcoming project activity generally focused on the following themes:

*Hypothetical identification of previously unidentified contamination:* A participant asked who would be responsible for cleaning up contamination found after the Certification of Completion is issued, how that contamination would be cleaned up without the processing facility, and whether or not GE would have some liability. Mr. Klawinski responded that five-year reviews will be conducted and, if data indicates a concern regarding the protectiveness of the remedy, EPA will consider how to address it appropriately (i.e., capping, dredging and processing on a smaller scale, or another solution). Mr. Walter Mugdan, EPA, added that the ROD specifies the circumstances in which EPA could mandate GE to conduct additional cleanup, but said this is a high bar to meet: EPA must have a strong scientific basis to conclude that the remedy “is not protective” of human health and the environment. This type of determination would be carefully reviewed by GE and likely challenged in court.

*Timeline of next steps and upcoming project activities:* A participant asked for clarification on the timeline of next steps, including those required for the NYS and Trustees to provide input on the Certification of Completion of Remedial Action. Mr. Klawinski said the timeline depends on how fast the demobilization and restoration work is completed; these activities could take a year or so. He also said EPA would provide progress updates leading up to completion of the remedial action at future CAG meetings.

*Future public comment opportunities:* Participants asked if various dredging wrap up reports, including the certificate of completion of remedial action and the certificate of completion of work, would be available for public comment. Mr. Klawinski said the public and the CAG would have the opportunity to review and comment on the reports.

*Remedial action objectives:* A member asked if EPA would take action immediately or wait until the 5-year review if it appears the remedial action objectives will not be achieved. Mr. Klawinski said data will be reviewed and evaluated as it is collected leading up to each 5-year review and that data obtained between 5 year reviews will be included in subsequent 5-year review document.

*Other:* CAG members and liaisons also made the following comments:

- A CAG member indicated that it is not acceptable to leave PCBs in the river, including those 136 acres outside of the ROD, and that it doesn't appear that EPA is representing the community's best interests. Mr. Mugdan said that when the ROD was approved, EPA stated that the project could not remove all the PCBs from the river and estimated they could remove two-thirds of the PCBs. He acknowledged that more PCBs were found in some dredged areas than had been predicted, which leads to the presumption that more PCBs are located in the areas that have not been dredged. However, EPA believes the remedy will be protective and the data currently does not indicate that more dredging is required,

- but EPA will continue to discuss these important questions with partners.
- A participant asked if the criteria for certification of completion include the level of PCBs suspended in the water column. EPA said that this is not one of the criteria related to completion of the remedial action.
  - A participant expressed concern about human health and safety, asking how children can play in the sand but not in the water. EPA responded that the nearshore areas will be evaluated as part of the floodplains and contaminated sediments will be removed or capped as appropriate.

### **Processing Facility Demobilization and Restoration Plan**

Mr. Klawinski, EPA, presented on the processing facility demobilization and restoration plan, which is available for public comment until Monday, October 5. His points are summarized below (See presentation available on the project website for additional detail).

The processing facility is still operational, although some equipment that is not being used has been taken apart to clean, similar to the process at the end of each season. Once the Processing Facility Demobilization and Restoration Plan is approved, the equipment will be demobilized, and the site decommissioned and returned to its property owners. The approval process will require coordination with state and local agencies and property owners and the municipality. Most of the facility is private property. Canadian Pacific owns the rail yard.

There are several challenges to overcome. The determination of what will remain on site and what must be disposed of is a series of complicated decisions that depends on considerations such as the ability to clean and salvage infrastructure, costs, and other considerations. See slides 9-14 for more information on the decontamination process in the slide set titled “EPA Processing Facility Demobilization and Restoration Plan.”

Testing will occur as part of the decontamination and decommissioning process. Samples will be collected from the soil, surface water, sediment, and groundwater in and adjacent to the facility to assess if any contamination occurred.

Mr. Klawinski noted that discussions will continue with GE, EPA, New York State, property owners, and municipalities about the demobilization and future site use. Demobilization will continue into 2016.

CAG member discussion of the facility demobilization and restoration plan focused on the following themes:

*Decommissioning the processing facility:* A member said there is no need to rush to close the facility when dredging the navigational channel and the 136 acres is needed. She asked why the facility could not be decontaminated as normal and the decommissioning postponed until the spring, a timeline that may allow time for an agreement regarding additional dredging. She added that if the facility is closed, the public will suffer more because of the PCBs left by GE and because the public will be required to pay for their removal. Another member said that the people living near the facility have been severely impacted and the facility should be shut down as planned to give adjacent residents peace and quiet. Mr. Mugdan replied that the ROD requires GE to decommission the facilities once dredging is completed and that if EPA were to suggest GE refrain from completing the requirement, GE could submit a formal dispute to EPA under the consent decree. If EPA rendered an unfavorable decision to the formal dispute, then GE would likely take it

to court indicating EPA had no basis for making them wait to decommission the facility. He described and commented on three possible ways that GE would do more dredging: (1) if EPA requires more dredging based on the consent decree requirements, (2) if another party such as the NRD Trustees or NYSCC reach agreement with GE to do additional dredging, or (3) if GE voluntarily decided to dredge more. He said if the first two options looked likely then he would anticipate that GE would keep the processing facility operational, but he has no reason to believe that the second option is likely.

*NYSCC dredging the navigational channel:* A member said that as a taxpayer, she does not want to pay for NYSCC to build a new dewatering facility. She asked if the NYSCC had input on the decommissioning plan. A NYSCC representative affirmed they had submitted comments. Another member said the capacity of the existing facility is greater than the capacity needed to dredge the navigational channel and that smaller facilities could be used to dewater sediment from the channel.

*Public comment period:* A member requested the public comment period be extended two weeks from the CAG meeting, if not 30 days. Mr. Mugdan said that EPA will consider the request and notify the public if it is extended.

*Trail system:* A member said Saratoga and Washington Counties are building a walking trail and asked that EPA consider where the trail could cross the property. EPA said that the trail had been discussed.

*Other:* A member commented on the finality of decommissioning the dewatering facility and about the certificate of completion, stating that there is no finality about when people can eat fish or dredge a marina without fear of PCBs. He requested EPA include a certification of cleanliness for the river to determine when it will be cleaned up. Mr. Mugdan responded that the fish data would be the basis of providing this certification of cleanliness over time. The ultimate certification of cleanliness will be when DOH reduces and ultimately removes the fish advisories.

Members of the public shared several comments with the CAG, summarized here:

- Dan Raichel, NRDC, noted that all information collected between 2010 and the present could affect the direction of the remedy and requested that before certifying Phase 2, EPA try to understand whether or not the remedial action objectives will be achieved. Mr. Mugdan commented that none of the alternatives predicted the achievement of the human health advisories in fish in a 50-year time frame. He said that interim milestones of 0.4 and 0.2 ppm were established in fish, and that institutional controls such as fish consumption advisories will need to be maintained.
- Dan Lundquist, property owner along the Hudson River, reported that many people around him would echo that it is a missed opportunity and a job left undone if GE pulls out of the river before all the PCBs are removed from additional known locations.
- Barbara Thomas asked if a new superfund action should be undertaken to require that GE clean up the Old Champlain Canal or whether this can be arranged under existing authorities. Mr. Klawinski said the Old Champlain Canal would be evaluated as part of the floodplains work.
- Patrick Nelson, Stillwater resident, said the region is working against the public perception of the river being a toxic dump, noting that hearing that 60% of the PCBs were removed is not enough to persuade people it is clean.

## Update on Fish Special Study

Dr. Marc Greenberg, EPA, presented the fish special study update. His main points are summarized below (See presentation available on the project website for additional detail).

The risk posed from fish consumption was the main driver for the remediation. Fish monitoring has occurred since the 1970s. Since 2003, monitoring has been designed to show both short- and long-term progress toward achieving the remedial action objectives (RAOs).

The 2014 fish special study was conducted because EPA identified that samples were being filleted differently than the NYSDEC standard fillet procedure. Prior to 2004, fish were collected and processed by the New York State Department of Conservation (NYSDEC) using a standard fillet including fish ribs (referred to as rib-in fillets). In 2004, GE began to sample fish under the baseline monitoring program. The Phase 1 Dredging and Remedial Action Monitoring program began in 2009. During a 2013 laboratory visit, EPA and NYSDEC found that GE was filleting fish without the ribs (referred to as rib-out fillets). Subsequently EPA and NYSDEC discussed the issue and developed a special study of fillet methods. In 2014, GE agreed to conduct the special study to compare the rib-in and rib-out fillet methods. At the same time, EPA required GE to switch to the NYSDEC Standard (rib-in) fillet sampling for the 2014 collected fish.

The fish special study was designed to investigate and understand how rib-in and rib-out fillet samples might result in differences in the measurements of wet weight of total PCBs. The results, which looked at about 130 fish (Black Bass only) taking one rib-in and one rib-out fillets from the same fish, show that different fillet methods resulted in higher PCB concentrations in rib-in fillets. The difference is likely due to more fat being included in the rib-in fillets. Dr. Greenberg emphasized that this difference was significant for wet weight fish results but not significant for data that had been lipid normalized. Wet weight data is used when considering fish advisories and remedial action objectives. Lipid-normalized data is used when considering trends in data over time.

The data from this work is public, but the special study analysis is still under review. EPA can provide the data to CAG members upon request.

CAG member questions and comments about the fish special study focused on the following topics:

*Influence on the 2012 Five-year review:* A member asked if a statement in the five-year review (“fish data will improve more quickly than expected”) referred to rib-in or rib-out fillets. EPA indicated the referenced statement was based on sediment concentrations in the river, not on fish tissue concentrations.

*Usefulness and accuracy of the data:* Members asked if the data collected by GE with rib-out is incorrect and if EPA now must try to correct the data to make it useable. Dr. Greenberg noted that how people slice the fillet could cause variability in the amount of PCBs in the sample and that the study was intended to show whether the different fillet methods show different results. Mr. Mugdan said the data on which EPA established the ROD was rib-in, and that the sampling methods for comparison of fish tissue concentrations to the established targets and remedial goals will be rib-in (to allow for an “apples to apples” comparison). While there was a period where sampling was done rib-out (referred to as the ‘orange’ period during the discussion), EPA indicated that that

period was limited and occurred during the dredging when fish concentrations were expected to fluctuate. EPA and NYSDEC are discussing how the data for the rib-out period should be used and interpreted.

Members asked if the data from rib-out samples had been used to make decisions and if EPA had noticed the fish tissue concentrations weren't responding appropriately. Mr. Klawinski said that no decisions about what GE was required to do have been based or will be based on the rib-out data, and that if the data supported operational changes, those changes would have only influenced the rate and/or location of dredging. He said that the rib-out data was useful to monitor and understand the annual influence of dredging on fish tissue concentrations and showed what they anticipated would happen: that short term concentration increases near dredging operations abated as dredging moved away from the area.

A member asked if the period of rib-out data will impact EPA's ability to determine trends over the long-term. Mr. Greenberg said the remedial action is still underway and they did not expect to see long-term trends at this point because dredging causes temporary spikes in tissue concentrations. The important trends are those that occur after dredging is completed. EPA prefers the trends be established using the lipid-normalized concentrations, since this method controls for variability in fat content.

*Cause for the change of methodology and its discovery:* Members asked why GE switched methods, if GE knew they were to use rib-in and the change was intentional, and how the change was discovered. A member suggested that if it seems GE was acting in bad faith, perhaps it could be used as justification to require GE to address additional issues before decommissioning the dewatering facility. Mr. Mugdan said that EPA did not request or intend for a change in methodology, and that he would be surprised if it was intentional. He said there appears to have been an inconsistency in the rules established in the 2009 Remedial Action Work Plan: A narrative section in the plan described the need to use rib-in methodology, but the reference in the narrative referred to an attachment describing rib-out methodology. Unfortunately, EPA and their partners did not catch this inconsistency and only discovered the use of rib-out fillets while visiting the lab with the NYSDEC. A member expressed disbelief that it took EPA so long to identify the oversight and said it is unconscionable to let GE leave the river when they collected unreliable data.

*Fish studies and consumption of fish from the old Champlain Canal:* A member requested fish tissue concentration studies be conducted in the old Champlain Canal, since many people eat fish from it. Mr. Klawinski said the floodplains work will include an ecological risk assessment that assesses fish tissue. Another member talked about eating a fish dinner with a Vietnamese family with young children and women of child-bearing age that caught fish from the river. They eat the fish 4-5 times per week and said they cook the fish mostly whole because the recommended way of filleting reduces the flavor.

A member of the public commented on the fish special study: Dan Raichel, NRDC, asked whether EPA is saying not to worry about the wet weight data when we have data collected using the rib-in method, then rib-out data, then rib-in again. He asked if the trends EPA expected to see for monitored natural attenuation are occurring. Mr. Mugdan repeated that the data used to set the ROD was the rib-in data and that the data used to start monitoring the natural attenuation remedy after dredging concludes will also be rib-in. This will allow for apple-to-apple comparison of the

data sets. The rib-out data collected in the middle will not be used to gauge the success or failure of the remedy. Mr. Greenberg said the lipid-normalized data is considered standard scientific process, and that data is not available to establish a trend line for the remedy because post-remedy data collection hasn't started yet. The first point in the trend line will be from data collected in spring 2016. EPA will collect tissue data yearly and anticipates being able to detect statistically significant trends within approximately eight years, but may have an early understanding of the trends sooner.

### **Technical Review of Floodplains RI/FS Work Plan**

Ms. Terrie Boguski, Skeo Solutions, presented information gathered in response to the questions about the floodplains Remedial Investigation / Feasibility Study (RI/FS) Work Plan that CAG members submitted for independent review. The RI/FS work plan is the plan that describes how data in the floodplains will be gathered to determine how to approach floodplains cleanup efforts.

Ms. Boguski clarified that she does not speak on behalf of EPA and the information she presented was based on her professional interpretation of the plan. She noted that Superfund work plans tend to have a lot of moving parts and highlighted the need to keep up to date by maintaining communication with those completing the work. She distributed materials she developed that contain more details of the Floodplain RI/FS Workplan. For more on the contents of this presentation, see the document entitled "Hudson River PCBs Floodplains Workplan Technical Comments."

The questions submitted to Skeo by the CAG in Spring 2015 were:

- 1) How will the exposure point concentrations be developed under the Floodplains RI/FS Work Plan? Explain the information provided in Appendix A to the Floodplains RI/FS Work Plan, "Selection of Exposure Areas for Human Health Risk Assessment."
- 2) Explain the process for the Baseline Human Health Risk Assessment (BHHRA), including
  - a) What the ultimate deliverables will be
  - b) How the BHHRA will be used
  - c) What research will be required to perform the human risk assessment
  - d) What role will modeling play
- 3) Please provide a technical evaluation and assessment of the workplan.

The following is a summary of information presented Ms. Boguski (See presentation available on CAG Web Site for additional detail):

The purpose of a Human Health Risk Assessment (HHRA) is to inform the risk calculations and determine the risk of PCBs in the floodplain to human health. The HHRA involves four steps:

1. Hazard identification: To identify the hazard, its location, and the concentrations of PCBs.
2. Exposure assessment: To identify who is exposed to floodplains PCBs, how and where exposure is happening, and at what concentrations. This assessment should include all potential pathways of exposure to all the demographic groups who might be exposed.
3. Dose-response assessment: Executed by independent scientists and not directly tied to the situation at the Superfund site. Data in this step is based on industrial accident data, animal exposure tests, and assumptions about long-term exposure; it is not original

research specific to the Hudson River. This step attempts to estimate a relationship between an amount of exposure and a health effect.

4. Risk characterization: To characterize the risks associated with PCBs present in a defined exposure area by considering the hazard, the exposure assessment, and dose response assessment. This is a probability calculation to determine extra risk of cancer in an average lifetime. For example, if a parcel of land had a concentration of 24 mg/kg of PCBs, then a response might be required. But if the sample showed a concentration of 0.24 mg/kg, then no response would be required, since this is the regional screening level for PCBs.

Exposure Areas (EAs), Flood Frequency Units (FFUs), and Exposure Point Concentrations (EPCs) are used to calculate the risk assessment. An EA is an area within which an exposed person may reasonably be expected to move at random. A person is equally likely to contact the exposure medium (soil or sediment) at any location within the EA. A tax parcel may have more than one EA, but parcels will be assigned only one EA if possible. An EA may encompass more than one tax parcel.

The floodplain will be subdivided into different EAs based on current and anticipated future property use and expected human use. Property use can be divided into scenarios such as residential, recreational, agricultural, commercial/industrial, and schools. Community and property owner input will be needed to properly identify current and future use scenarios.

PCB concentrations in the floodplain are affected by the frequency with which the area is flooded and the elevation of the floodplain. In general, areas closer to the river flood more frequently and contain higher concentrations of PCBs, and the concentrations decrease as the distance from the river increases or as the elevation of the floodplain increases. Areas near shore that flood frequently and backwaters (low lying areas further from shore and flooded less frequently) are included in the floodplains.

Flood Frequency Units (FFUs) will be assigned to land in the floodplains. FFUs are the finest resolution of PCB concentrations in the floodplain and are defined using flood frequency, local region, type of flooding, and other factors. Multiple FFUs may span one EA or tax parcel. FFUs will subdivide the floodplain to identify the ranges of PCB concentrations in the floodplain.

Exposure Point Concentrations will be calculated for each EA. The data will first be compiled in each FFU by reviewing existing soil sample data and, if necessary, completing a second round of data gap analyses to gather sufficient data to calculate the EPC. Next, EPCs will be calculated for EAs using the data from the FFUs within the EA. EPCs in EAs represent the area-weighted average PCB concentration in the soil or sediment for a particular EA.

EPCs are calculated differently for each phase of the risk assessment. For example, during the initial screening-level assessment, the EPC for each tax parcel will be set as the maximum detected concentration of PCBs in the top 12 inches of soil. These EPCs will be compared to EPA's 0.24 mg/kg screening level to determine whether or not a property will be evaluated further. Phase 1 EPCs are based on the reasonable maximum exposure (RME), which is the greatest exposure reasonably expected to occur at a site. Phase 2 EPCs will be based on the RME and the central tendency exposure (CTE), which incorporate assumptions that reflect more typical exposures.

GE and EPA have yet to define several elements of the work plan. For example, they need to define each FFU based on location and the PCB concentration that defines the EPC (for both

phase 1 and phase 2). They will also need to define the location of each EA, determine the land use, identify how many FFUs it includes, and calculate the area-weighted EPC.

Some elements of the risk assessment are also yet to be defined. These include the precise floodplain boundaries, exposure factors for agricultural workers, and modified exposure factors that GE intends to develop based on the local climate. An example of a modified exposure factor based on climate may be that exposure to PCBs in soil is limited to 305 days per year because the ground is frozen and covered with snow for 60 days each year, thus limiting exposure.

CAG members provided the following comments and questions. Comments have been organized by topic, when possible:

*General comments:*

- A member suggested considering water an exposure pathway in the old Champlain Canal, since people kayak and fish in it. Mr. Klawinski said this would be considered, but noted that water was unlikely to be a major driver of risk.
- A member expressed concern that dose-response data is 15 years old or older and said dose-response data should be more recent.
- A member asked about the expected timeline to reach the floodplains record of decision and whether a partial ROD would be possible on some properties. EPA said that this process could take seven years but they are considering ways that the schedule might be accelerated as suggested by the member.

*Floodplain delineation:* A member asked if the floodplain delineation would be based on the FEMA flood maps. Mr. Klawinski said they are using multiple flood maps including the FEMA 100 year maps, elevation data, and data collected from actual flood events on the river. EPA said the best available data will be used to establish a conservative flood line (the point farthest from the normal river's edge where any of the data sources show that flood waters may reach). The flood line will be considered the outer boundary of the floodplain.

*Exposure point designation:* A member asked for clarification about exposure point designation. She said it would be a problem if, for example, she owns 20 acres and only the 10 feet of the property has PCBs the plan averages the concentration over the entire area of her property. Ms. Boguski said that the first 10 feet of property might have higher levels of PCBs and that FFU is in a higher floodplain and defined as an area of exposure. As you move further from the river, the concentration of PCBs will decrease and that area might be in a different FFU. Each of these areas may have different screening levels. If the areas stay in Phase 2, concentrations will be based on an area average. However, near-shore areas will be handled differently. Mr. Klawinski said it is very complicated process and unique to each property, since each property has different elevations and flood frequencies. He added that an initial overall property risk assessment will be followed by a site or portion specific risk assessment.

*Land use designations:* Members suggested that property owners, municipal officials, and others be engaged to better identify the correct current and anticipated future land uses. Mr. Klawinski said that current and anticipated use would be established by talking with state and municipal representatives and elected officials (some of whom project staff are already in contact with), community members and groups, and by reviewing regional planning documents, master plans, etc. The process for determining current and future

land use is quite general, rather than a methodical procedure, but that it would be included more formally as part of the pathways analysis report.

*Adequacy of the report:* A member commented it was difficult to judge the adequacy of the RI/FS work plan and asked whether Ms. Boguski thought the plan is an adequate approach to filling in missing data on contamination in the floodplains. Ms. Boguski indicated she thought the plan was a good start, and she is satisfied with the general approach. However, it is difficult to judge since the plan is so flexible, covers such a large area, and many components are not yet established (e.g., the floodplains delineation among others) and many site-specific decisions remain to be made.

### **Brief Updates and CAG Business**

An email from Lewis Steele and an attached letter from the Advisory Council on Historic Preservation, both of which previously had been circulated electronically, were distributed in hard copy to CAG members.

The next meeting of the CAG will be held before the end of 2015.