

## **Upper Reaches Rest of River Municipalities Meeting**

A work session between the permitting agencies EPA/DEP/DFG and the City of Pittsfield, Town of Lenox, Town of Lee, BRPC

February 27, 2014 @ 1 pm, Lenox Town Hall

- Role of components of the remedy selection process (EPA, MA agencies)
  - Nine criteria guiding remedy selection
  - GE's CMS/RCMS
  - EPA's Proposed Plan
  - Revised RCRA Permit and Performance Standards
  - Scope of Work for remedy implementation
  - Design and construction documents
  
- Rest of River terminology and geography (e.g. River Reach designations, floodplain Exposure Areas, Massachusetts designated Core Areas) (EPA/MA agencies)
  
- Review of the remedy components in the May 2012 Status Report and related Performance Standards (EPA/MA agencies)
  
- Questions/Input from the towns (Municipalities)
  - Review proposed work for River Reaches within the communities of Pittsfield, Lenox, Lee
  - Overview of proposed work in MA downstream of Lee

**EPA / EOEAA / Pittsfield / Lenox / Lee Work Session**  
**Held February 27, 2014 at Lenox Town Hall**  
**Meeting Notes**

**Attendees:**

Bob Cianciarulo (Bob C.), U.S. Environmental Protection Agency (EPA)  
Doug Clark, Pittsfield  
Lauren Gaherty, Berkshire Regional Planning Commission (BRPC)  
Nat Karns, BRPC  
Jim McGrath, Pittsfield  
Jim Murphy, EPA  
Bob Nason (Bob Nason), Lee  
Jon Regosin, Natural Heritage & Endangered Species Program  
Dean Tagliaferro, EPA  
Mark Tisa, Assist. Dir. Mass. Div. Fisheries & Wildlife  
Eva Tor, Mass. Dept. of Environmental Protection  
Jeff Vincent, Lenox

EPA staff walked attendees through the cleanup process and through the general strategy for cleaning up the various reaches of the river, using a power point presentation as an aid. The presentation is **attached**. EPA staff made it clear that the strategies that are being discussed today are from previous work and documents that have been publicly published; the Proposed Remedy Plan may not be exactly what we have before us today as staff are still working on the plan.

EPA's goal is to issue the proposed Remedy Plan in spring/early summer 2014. This is the next time that the public will be able to review and comment on the plan. And it is likely that it will not be the final plan. Between public comment periods, the appeals processes for both GE and the public, a Final Remedy will not emerge until at least two to four years. Responding to a question from Doug, Dean stated that the permit process will be carried out under RCRA up through the appeals process, but once the appeals are final, the cleanup will proceed under CERCLA. The RCRA process is what gives GE the additional appeals processes that it has. So, the actual implementation of the cleanup will occur under CERCLA jurisdiction. The involvement of the two cleanup laws is an usual aspect of this project.

Doug raised the issue of socioeconomic compensation. He stated that he attended a Hudson River cleanup presentation by Dave King of EPA Region 2. Dave King was saying that communities can collect social and economic damages under CERCLA. Dean responded that he was unaware of how this could occur, unless the communities sued. Doug responded that it was his understanding that the communities could not pursue socioeconomic damages because the Housatonic River was being cleaned up under RCRA. But, now that it seems that the cleanup itself will be under CERCLA, perhaps there is an opportunity for the municipalities to pursue compensation. Jim Murphy opined that perhaps Dave King was referring to natural resources damages, and that he (Dave) was not that familiar with the Housatonic River project. Doug reiterated that the goal of the municipal group was to recover some of the socioeconomic damages that they will incur during the cleanup. He would like, to best of everyone's ability to: a) clarify if indeed the project is proceeding under the appropriate law (and if not, is there a chance to change that); and b) if not, can we review what is going on in the Hudson and learn from their experience, if they have been successful in receiving compensation. There are hundreds of yards of contaminated sediments being removed over in New York right now, so there must be some similarities. Regarding the CERCLA process, Dean noted that the EPA was the permitting authority, and local or state permits are not needed for on-site cleanup actions, but that actions will need to comply with all local

and other permits off-site. For onsite work, it is the EPA's responsibility to try to comply with the intent of all local and state laws, but that cleanup actions will not need to receive permits from these authorities. For example, there is no requirement to get local wetland permits. Nat asked if the work will need to obtain federal permits, such as wetland permits. Dean responded that no, they will not need to obtain, for example, a federal 404 water quality permit or historic preservation permit. GE does need to comply with the intent of these laws, which is why some archeological work has been done along stretches of the river, but the actual formal permit, the piece of paper from the various agencies, is not required to conduct work. EPA is the permitting authority, but must act as the agent of the other federal agencies and issue work requirements that comply with those agencies laws. The ARARs that are so often mentioned contain a list of some 20 state and federal regulations that the work must try to comply with, including wetland, historic, endangered species and other regulations.

Nat brought up the issue of defining "the site." It seems to be nebulous at this time, not clearly defined. Dean concurred, saying the site was still being defined. The definition that EPA is using is "at or near the site, as necessary to carry out the action." For example, East Street runs right through the middle of the GE plant properties, but the road itself is generally considered part of the cleanup site. Regarding the cleanup at Silver Lake, trucks moved from the lake to the staging area on East Street, but because the two sites were so close, EPA considered the entire area part of the site for this action and did not require hazardous waste manifests for trucking lake materials along East Street because the two sites were so close.

Cost will also be considered as part of the ARARs. EPA will consider the balance of cost when considering short term impacts to the area of work, including neighborhoods. It is not a consideration that has more weight than other ARARs, but is a consideration. In this instance, "cost" would be the cost of cleanup activities to GE. It does not include the broader sense of cost to the communities.

The Remedy Plan that will be issued in spring 2014 will not be a thick document. It is expected to be about the same length as the response that EPA gave to GE in 2012. It will include performance standards. It is not an intensely detailed document, but will be the basis on which GE will design the cleanup plans and submit scopes of work for each cleanup section. These work plans will contain the very minute details, such as construction details, controlling dust, plans for the public to continue to use the river or not, managing truck traffic, etc. The work plans will be the best place for local governments to review detailed proposals and weigh in on them.

A question was asked about the timeline for cleanup – what type of timeline will the Remedy Plan lay out? Dean was unsure about the exact timeline, but felt that the Remedy will not list specific dates or milestones. It will be up to GE to propose an overall timeline to the EPA for approval, and then more detailed timelines will be proposed later, as the cleanup is being designed by GE engineers and consultants. Nat inquired about the issue of cleanup of dam impoundments, raising the hope that the EPA will require GE to be flexible and ready to clean up specific impoundments if an opportunity arises to improve or remove any of them.

Bob asked if the recently tested areas in Lee were considered part of the impoundments, as some of the sites had high PCB levels. Dean responded that he believes these sites are being considered "backwaters," and are included in the overall cleanup site.

Dean showed a slide that shows the area of the river that is being considered Rest of River. It starts at the confluence in Pittsfield and goes all the way downstream through Connecticut. Most of the work will be conducted in Reaches 5 and 6. Dean noted that the section markers are important, as the

Remedy will likely prescribe different cleanup levels and performance standards for each specific reach of the river. For example, the Remedy may call for different approaches in Reach 5A than in 5B, and river channel may have different approaches than backwaters. Jon explained that there will be more bank work in Reaches 5A and 5C, and less in 5B, due to the dynamic nature of the river and different flow patterns in different reaches. Efforts will be made to stabilize the banks and reduce erosion as much as possible, using “soft” bioengineering techniques as much as possible. The Status Report explains this rationale.

Core area habitats are ecologically sensitive areas, defined by Division of Fisheries & Wildlife (DFW). Core I is the most sensitive of the habitats, with Cores III and IV less sensitive. Each of core categories have a list of rare species that are included within those categories.

There are 90 delineated areas where GE will have to clean up the areas according to human health risk by exposure. For example, post-cleanup floodplain PCB levels will be determined by the health risk of people recreating near the river. GE will have to meet the standards set by EPA in each of these 90 areas. Parcel ownership was used as one of the criteria to establish the 90 areas, as future land uses and human exposure may be influenced by ownership. For example, Audubon lands are presumed to get a lot of human use, so the cleanup standard will be more stringent there than other undeveloped areas where human use is more limited. There is no strict number by which all areas have to meet. Conversely, Core areas where sensitive species reside may have less stringent standards, to avoid having to disrupt the habitat to clean it up. It was noted that all areas, regardless of use or rare species, will meet the minimum human health standards. Some areas that have heavy human use might be required to be cleaned up to an average of 5 ppms, but others with less human use might be cleaned to a level of 80 ppm. In general, the 10-year floodplain seems to be the demarcation of where PCBs have become concentrated over time, and is a good guideline to aid in showing where PCBs have settled. It is estimated that 90% of the PCBs lie between the confluence and Woods Pond, and almost a quarter of those are within Woods Pond itself. The majority of these lands between the confluence and Woods Pond are owned by DFW – 900 acres, which is in the range of 80% of the lands in the 10-year floodplain.

At this time there are several construction techniques being considered to remove PCBs from the river and other areas. Some work might involve coffer dams and working in the river channel “in the dry”, or working from the riverbank; other techniques might involve working from a barge in the river. It was noted that a barge was used in the cleanup of the first 1.5 mile stretch of the river. The Remedy will not prescribe the favored techniques, it will be up to GE to propose the technique. The cleanup will take several years, and it is not wise to try to prescribe something that may not occur for years. It will be difficult to revise the Remedy Plan, so setting standards that are broad, while requiring detailed work plans that can be more easily approved and revised is the strategy being taken. EPA has determined that it is best to determine details later, when getting nearer to cleanup of specific areas.

Jim McGrath asked what will happen if rare species are found during the course of work along the river or floodplain. Jon responded that MESA is an ARAR, so GE is required to try to avoid or minimize impacts to new rare species found along the way. This may require that GE relocate rare plants or monitor movements of rare turtles. Although NHESP will be involved, EPA will have the final say in what remedies will be required to reduce impacts to rare species found.

Nat inquired as to what engineering techniques might be considered to reduce movement of the river and erosion of remediated banks during severe storm events. There is a concern that storm events will expose and resuspend PCBs left behind. Dean explained that in river channel it is expected that bottom soils will be removed and a cap of backfill soils will be placed along the channel to keep native soils in

place. This will reduce the chance of scouring exposing native soils with remaining PCBs. Mark added that ongoing monitoring of the system will continue to take place to make sure that PCBs left behind are not reintroduced into the river system. If contaminated banks are exposed and determined to be new sources of PCBs, GE will need to remediate the situation.

It is expected that the Remedy Plan will specifically require that GE consider conducting pilot projects along the way. Reconstructing successful vernal pools is one example. The requirement will be open ended as long as the cleanup continues. Where pilot projects meet with significant success over conventional remediation techniques, GE may be required to replicate pilot projects as work continues downstream. Lauren asked about the process for protecting rare animal species. Might NHESP collect individual creatures, hold them in captivity during construction, and then release them once construction is finished? She specifically asked about Jefferson salamanders. Jon responded that no, there was no plan to capture individuals and release them once construction was finished. Rather, the state may set parameters on the seasons that construction can occur or monitor the movement of wood turtles to keep them out of the construction zone. As an example of this, GE has excavated and restored some vernal pools, and the obligate species have returned to spawn, including fairy shrimp, frogs and salamanders. It is unknown where they went or how they survived through the construction period. For rare plants, they may require that GE collect individual plants and/or seeds for re-establishment after construction.

Nat noted that the macroinvertebrate populations have rebounded in portions of the river that have already been remediated in Pittsfield. He asked if the Remedy will have restoration goals that include reestablishment of certain species, such as requiring population reestablishment quotas. Dean responded that the Remedy will include general restoration goals for post construction ecological conditions, but the goals will not be detailed, such as requiring a reestablishment quota for specific wildlife populations. Bob C. stated that the goals will require that GE restore the habitat to a level that will support the reestablishment of specific species, such as restoring river substrate that will support macroinvertebrates, but not require quotas. Mark added that the goals will be habitat-based, that GE will be required to restore the habitat to mimic and function what is there now, before construction. He further noted that although the area is polluted with PCBs, it is still one of the most species-rich, diverse habitat areas in the state. So, at a minimum, the goal would be to reestablish the richness that is there now.

Regarding Woods Pond, this is an area where extensive sediment removal is being proposed, to a level where the pond would be deepened. Whereby river channel work upstream is to replace the same amount of sediment that is being removed, to maintain a status quo, the plan in Woods Pond is to replace less than what is being removed. A cap of approximately 1 foot is planned, where in some places up to 5 feet of sediment will be removed. This will allow the pond to continue to trap future sediment during storm events. Monitoring and periodic dredging of the pond in the future may be required to maintain storage capacity. Lauren asked if the EPA would be setting a threshold, such as a specific PCB ppm level in the water or sediment, that would trigger future dredging or other remediation work. Bob C. stated that they were currently trying to determine such a trigger, which would probably be set as a standard within the water being transported over the dam. This would also apply to Rising Dam. But at this time, there is no prescriptive standard set. Removing PCBs upstream of Woods Pond should reduce the concentration of PCBs that will build up again in the pond, so if future dredging would be needed, it would probably be many years away.

The one area where GE will be required to achieve a numerical standard of PCBs is within fish tissue. So, GE will be required to continue to monitor fish for years to come. If they can't meet the fish tissue goal,

they will have to propose new actions to reach the numeric goals. Right now no one should be consuming fish from the river. It is hoped that after 50 years fish from the river can again be consumed.

Lauren asked how long by statute can the EPA keep GE responsible for coming back to repair or fix any problems that occur. She noted that severe storms have increased and the 100-year's storm is likely to be reoccurring much more often than 100 years, likely exposing and resuspending PCBs left behind. Bob C. stated that GE is responsible forever. If 100 years from now the EPA determines that the cleanup levels were not good enough, they could require GE to come back and conduct more cleanup work. The cleanup process might need to be reopened and permitting redone. But, as long as GE is keeping up with monitoring and any remediation needed, they would be in compliance with their permit. Lauren asked what would happen if GE dissolved. Bob C. responded that a financial surety is required, that the company has to continually show that it has the finances to continue to monitor and conduct future remediation. If the worst occurred and the company went bankrupt, then future cleanup work would fall to the EPA. The site might then have to be declared a superfund site.

Regarding Columbia Mill dam, it is generally agreed that removing the dam would be beneficial, and EPA is trying to draft the Remedy to allow that to happen. They cannot require GE to fund the removal, but they can require that GE participate and pay the increased cost of removal that is caused by the presence of PCBs, such as testing, handling and disposing of them. EPA's intent is that GE is still on the hook for any PCB-laden sediment behind all the impoundments. EPA is still trying to determine the language that would bind them to pay for PCB-related costs in the future. It is a challenge to write language that will require GE to be flexible enough to be able to jump to work at a dam in a timely manner so that any problems or new opportunities at any of the dams can be dealt with swiftly and efficiently. Maintaining uncontaminated, high-quality water downstream of Woods Pond was again raised as a concern, particularly for Onyx Paper in Lee, which requires high-quality water for its paper-making process.

Dean discussed the issue of how contaminated sediments will be removed from the area – if by truck, which routes. There seems to be a preference from the Berkshire communities to remove the sediment by rail. EPA's first draft Remedy had rail as a preference. EPA's presentation showed a slide of the Hudson River handling area, which includes settling ponds and other industrial uses. Doug said he had heard some talk about keeping this landing/handling area for future commerce and recreation – docking for future freight and some area for recreation. Dean acknowledged this, but noted that the Housatonic River is a little different in that dredging will occur along a much longer stretch and there is no apparent site for a central docking/loading area. If the sediment is to be transported out via rail, there will likely be three off-loading areas to the rail, not a central site. And although rail would be a good way to minimize traffic impacts, it is not a panacea. At a minimum the three loading areas along the tracks will need to be constructed, and sediment will probably still be loaded from the river onto trucks, which would then transfer the sediment to rail cars. As for dewatering facilities, it is still unknown how many would be needed or how large they need to be, because the exact method of sediment removal and handling is still unknown. As an example of what has been done, Dean noted that there were two major staging areas for the first 1.5 miles of river cleanup. GE has several for the cleanup of the GE facility itself. Looking at an aerial map of the rest of river site, Dean noted that 2 feet of sediment will likely be removed from the river in Reach 5A, but that different amounts will be removed from floodplain and backwaters. So, at this time there is no set number or locations for staging areas. EPA has a strong preference that transport of contaminated sediment not travel through the residential neighborhoods along the site.

Nat asked how much say the local government will have on the type of sediment removal technique and the located on staging areas during the review process. Bob C. and Dean both stated that local property owners and governments will be able to weigh in on how work will be done in their jurisdiction, but with the understanding that work must get done and the EPA will have the ultimate say on these types of issues. Many of the staging areas shown on current maps are owned by the state; some others were chosen because they are currently open, fairly large areas that would fit the needs of a staging area.

Dean then led a discussion of the probable work and standards that would be drafted for each reach of the river, beginning in Reach 5A down through Woods Pond. The probable work can be found in the Status Report and in the powerpoint presentation attached to these notes. Lauren asked if the level of cleanup for the various areas, even within each reach, is data driven. For example, she referred to the series of maps that EPA has created for the length of river in Massachusetts. Each of these maps has dozens, maybe hundreds, of flags showing sampling sites and the PCB concentration found at each one. She asked if this vast inventory of sampling data will be used to dictate cleanup levels. Dean said that yes, the sampling data will be used as reference and, where PCB concentrations reach a certain level (he believed it was 50 ppms for river and bank, but wasn't sure), GE will be required to resample to insure that cleanup will be done to reduce the concentrations to at least that threshold level. Floodplain cleanup levels will be different.

Lauren asked about the re-establishment of invasive plant species once cleanup construction has ceased. How much is GE responsible to restoring the ecosystem and controlling reinfestation of invasives. She noted that purple loosestrife is widely spread along the entire stretch from 5A to Woods Pond, milfoil is in the river and water chestnut is throughout Woods Pond. Dean stated that GE has been good about going back and controlling invasive species in the first two miles, including hand pulling, including knotweed in some areas. He acknowledged that it will be a big issue going down the river.

It was noted that the extent of contamination of floodplain on the west side of the river generally stopped at the railroad tracks, which probably acted as a berm to hold back floodwaters. In essence, the tracks are the boundary for the floodplain. Nat asked if waters to the west of the railroad tracks, where culverts might let water flow back and forth under the tracks, were sampled for PCBs. If not, it might be worth sampling these to make sure contamination doesn't extend beyond the tracks. He referred to the recent sampling of backwaters in Lee showed new PCB contamination that wasn't found earlier. Dean could not recall if sampling was done for such waters, but noted that an extensive sampling regime will be required for each reach of river before a work plan is approved, so this could be done then if it has not been done to date. Nat pressed that sampling should be conducted to avoid finding new pockets of contamination in the future or missing the pockets altogether.

Timing of work – EPA is thinking that GE would start Reach 5A and Woods Pond at the same time. Excavate Woods Pond but hold off capping it until all upper reaches have been cleaned up. This helps to create holding capacity and compress the overall cleanup schedule.

Discussion turned to the dams and impoundments. In general, the previous plan called for excavation and capping of sediment in the impoundments.

The existing Remedy Plan did not specifically require GE to cleanup the mill holding ponds near the Columbia Mill because they had not been sampled at that time. Sampling of these ponds was only done last year. Bob N. asked how he could get these sites listed in the new plan so that GE would be required to clean them up. Bob C. suggested that these sites would be categorized as backwaters, which are

included in the plan. Dean and Bob C. opined that the new plan should specifically list and map these as part of the backwaters category so that these sites would be included in the final Remedy Plan. Bob N. again stressed that the ponds be included in the new plan so that the town and residents could get the best possible outcome for these waters. The Onyx mill dam was again raised, noting that the Onyx mill needed high water quality for their paper making process. Dean suggested that EPA staff should meet with the mill owners to get more detailed information about their needs.

Removal of Columbia mill dam has been discussed and has been the focus of some work by the Div. of Ecological Restoration. There has been preliminary work and cost estimates drafted for removal, but nothing is close to being final. There may be extensive dredging required at the Rising dam because of the large size of Rising Pond. Although there are concentrations of PCB eight feet down into the sediment, the previous plan called for dredging only surficially, filling in to maintain the current bathymetry, and capping. Lauren asked why EPA was not dredging deeper, like they are at Woods Pond. Removing more sediment would remove more PCBs and also provide more holding capacity, creating second settling area below Woods Pond for PCBs being transported from upstream. Expense of dredging, handling and storing large volumes of PCB sediment was given by EPA as a long-term concern.

The discussion turned to cleanup activities that may occur in the three southern towns. Regarding residential properties, there may be cleanup on one site in Lee and a few in Stockbridge. Some cleanup of floodplain in Lee and Stockbridge is expected. There is no cleanup expected within the town of Sheffield.

Lauren noted that the materials that EPA staff provided in anticipation of this meeting (**attached**) was very helpful. She asked if the towns could send comments to the EPA in hopes that the comments might be considered and included in the new Remedy Plan. EPA staff answered yes, they could send comments, but send them "soon," as the Remedy is due out in late spring. The comments should be sent to Jim Murphy. Dean reminded attendees that the public, including town officials, will be able to comment on the plan once it is issued.

Nat asked EPA staff what standards will be placed on GE to monitor and control sediment and PCBs from being transported downstream during construction. Dean noted that the previous plan did not include a specific standard for sediment or PCB levels in waters flowing downstream during construction of previous work. EPA anticipates addressing these types of things during design and approval of work plans. There might be a standard set at Woods Pond, but this is not yet set. Again town officials note that Onyx mill requires high quality water for its processes, so this is a concern. Bob N. noted that municipal wastewater treatment plants have specific water quality standards that their effluent needs to meet – will increases sediment effect their effluent permits? Onyx takes in water and discharges it after use – could sediment and/or PCB levels in the water effect their discharge permit? Bob N. suggested that EPA and DEP might be forgiving if water quality near the discharge sites is off during construction upstream. Eva Tor replied that this is what they already do – the agencies will work with the municipalities to make sure that sediment or turbidity upstream and out of their control does not kick treatment plants out of compliance.

Jim McGrath asked about the impacts of climate change, how this whole project might be built to meet the demands of climate change in the future. More severe storms, more erosion, more chance for re-suspension of PCBs left behind, etc. EPA and DFW staff acknowledge that climate change is an issue, and that standards need to meet those demands, but it is unsure how to incorporate this into the Remedy Plan. Mark Tisa mentioned that DFW is trying to deal with this as regards to FERC relicensing. FERC is willing to include standards that the state feels is more protective given climate change, but the

state is unsure of the standards needed. The state is internally considering language that sets up re-opener clauses for FERC licenses, and perhaps it can be used here. If the FERC license is 50 years, might it be possible to have periodic reopeners, whereby if there is a noted change in water flow conditions, the license is reopened to meet the changes. Dean noted that the permit will have standard re-opener clauses throughout, but the thresholds to reopen are quite stringent and difficult to evoke. Only once there is new, clear information that the remediation work was not protective enough can the EPA prevail and have GE do more work. It is one thing to tell GE to fix or maintain a certain piece of work that fails, such as repairing damaged rip rap or bank stabilization, but it is tougher to make them go back and redo work that EPA approved as appropriate in the first place. Each new incidence of where PCBs might be entering the river system after construction is completed will have to be reviewed on a case-by-case basis. Both Nat and Doug expressed concern that PCBs left behind post-cleanup would inevitably be reintroduced into the river system during storm events, given that the river system is dynamic, the meanders are moving, and climate change will increase the number and severity of storm events. It was still not clear that GE will be required to go in and remediate the problem to stem the flow of PCBs. EPA staff agreed that it is a challenge, but again the agency is trying to achieve a practical and defensible balance.

Nat noted that the monitoring program will be a critical component to reduce future reintroduction of PCBs into the water column, given that the river will be cutting new channels and exposing new bank. What standards will be written into the Remedy Plan to require GE to go back and sample newly exposed soils? Mark stated that there will be a flux standard that GE will have to meet at Woods Pond dam. If there is a spike in PCB concentrations going over the dam, GE will be required to look upstream to find the new source and remediate. Doug and Nat noted that there are several meanders along the river where it is very likely that a new channel will be cut during a storm event in the near future. They suggested that it would be prudent to test the soils in the area of the projected new channels now, before the channel moves, to make sure the site is not a hot spot and that PCBs are not there waiting to be released into the river.

Bob C. stated that agency staff are aware of various camps of constituents – some favor a “do more,” extensive cleanup, others favor a “do less,” very little cleanup. He said that when he came to this meeting today he believed that the municipal group was in the “do less” camp, but now he’s hearing that the group might favor a “do more” approach. The municipal attendees responded that they are struggling with this issue, as they are still trying to understand the various options and the implications of each option. Doug responded that the approach and the standards might be fine, but he believes that the river is moving and PCBs will again be exposed. The inevitability of reintroduction of PCBs seems to be the science that is not being fully considered. Nat said that he is concerned about the high thresholds required to reopen certain aspects of the Remedy Plan.

Municipal representatives thanked EPA and EEA staff for taking the time to meet with them to discuss the potential Remedy Plan in some detail. The meeting ended after 2 hours, 57 minutes



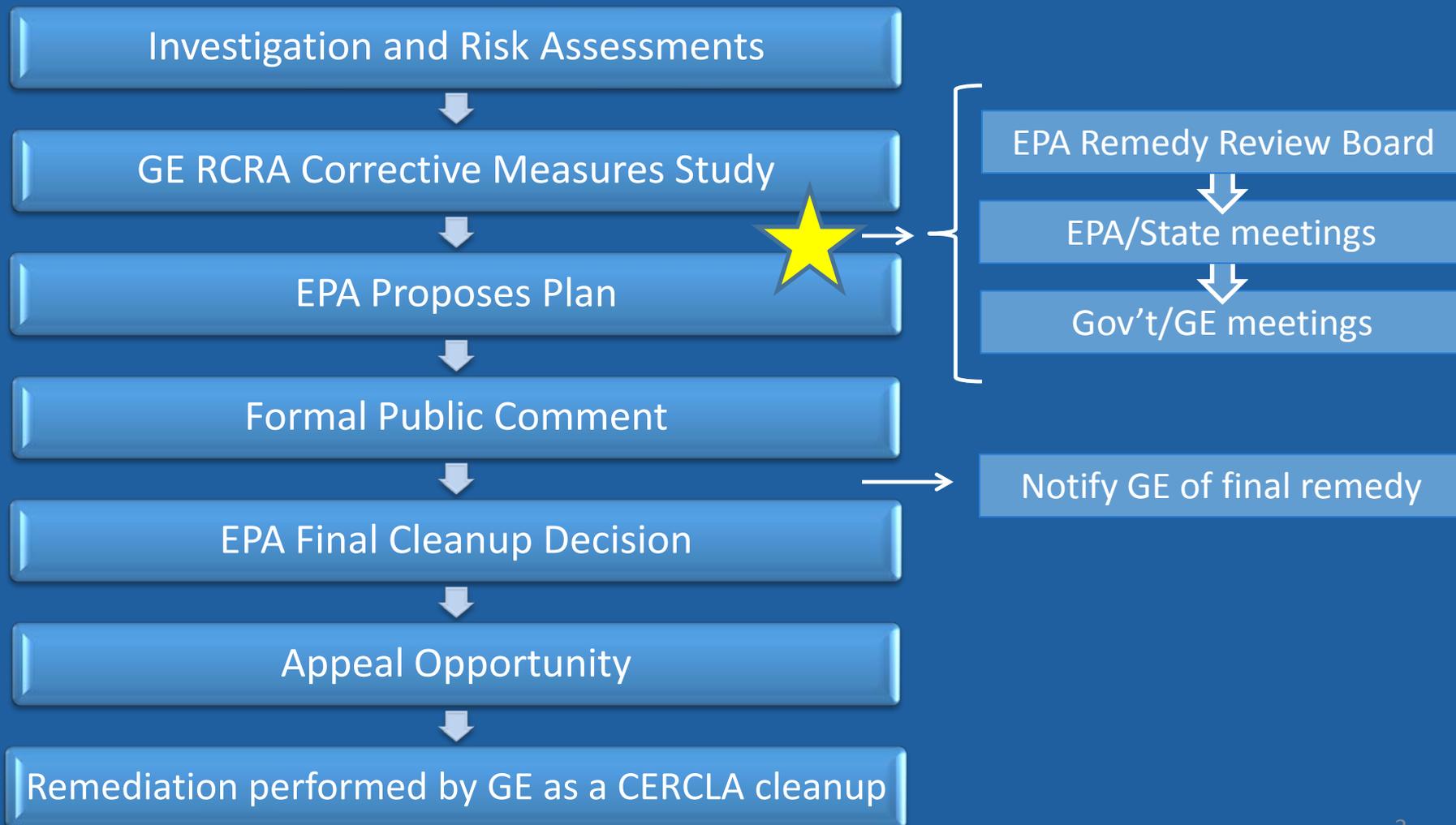
Rest of River  
GE-Pittsfield/Housatonic River  
Site  
February 2014

# Agenda

- Remedy Selection Process
- Rest of River terminology and geography
- Components of the cleanup proposal to the RRB and May 2012 Status Report/August 2012 Performance Standards
- Discussion

Note: At present, EPA has not proposed a cleanup remedy for the Rest of River. That being the case, EPA does not have any proposals for specific areas to be addressed in a Rest of River cleanup or for any particular areas to be used for access, staging, transportation or other cleanup-related activities at this time. For purposes of this presentation, EPA is using as an example, but not as a remedy proposal, components of the cleanup proposal to the RRB and the May 2012 Status Report/August 2012 Performance Standards.

# Consent Decree Process: Rest of River



# RCRA Permit

## 9 Criteria for Remedy Selection

### General Standards

- Overall protection of human health and the environment
- Control of sources of releases
- Compliance w/ applicable or relevant and appropriate requirements (ARARs)

### Selection Decision Criteria

- Long-term reliability and effectiveness
- Attainment of interim media protection goals (cleanup standards)
- Reduction of toxicity, mobility, and volume
- Short-term effectiveness
- Implementability
- Cost

# GE-Prepared Documents

## Corrective Measures Study Proposal - Feb 2007

- Identified and screened potential cleanup approaches and technologies for in-depth evaluation in the CMS

## Corrective Measures Study (CMS) - March 2008

- Evaluated potential cleanup scenarios against 9 criteria and proposed alternative “best suited” to meet criteria = SED 3/FP 3/TD 3

## Revised CMS - October 2010

- Evaluated 2 additional alternatives and revised the “best suited” alternative = SED 10/FP 9/TD 3

# EPA-Prepared Documents

## Remedy Review Board – June 2011

- Presentation of Region's preferred alternative to the RRB  
SED 9A/FP 3A/TD 1 RR

## Status Report – May 2012

- Potential alternative that was an outgrowth of discussions between EPA and the States  
SED 9 FP 4 MOD/TD 1 RR

## Response to the RRB – August 2012

- Provided documentation and draft Performance Standards in support of the Status Report

## Proposed Plan – Summer 2014

- Will include the Statement of Basis and draft Reissued RCRA Permit (with Performance Standards)  
Remedy TBD

## Final RCRA Permit

# Potential Components of the Scope of Work



Examples include:

- noise, dust, odor, light standards;
- road use;
- Continued recreational activities

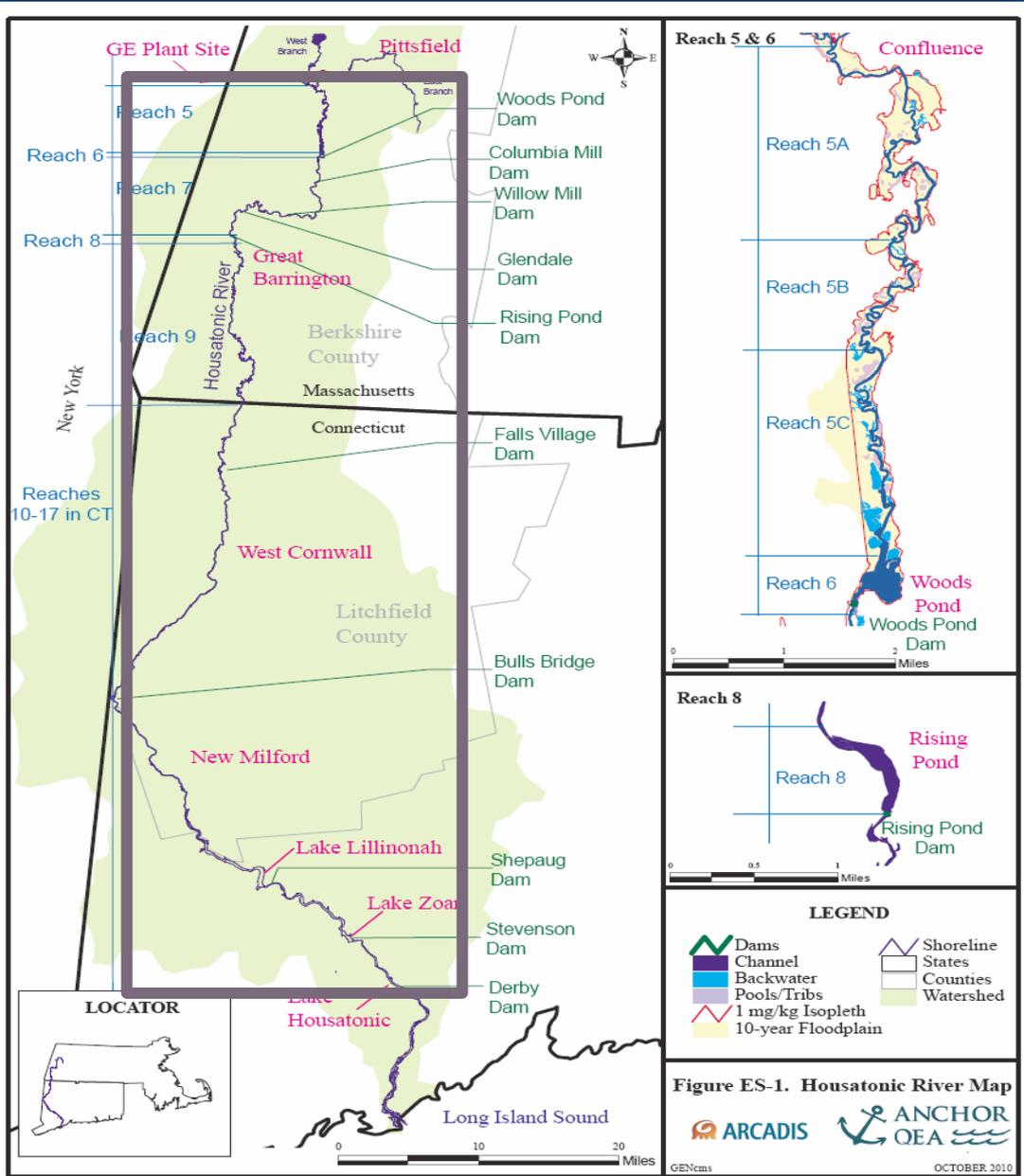
# Area Covered by Rest of River

Reaches 1-4  
East Branch

Reaches 5-9  
MA

Reaches 10-16  
CT

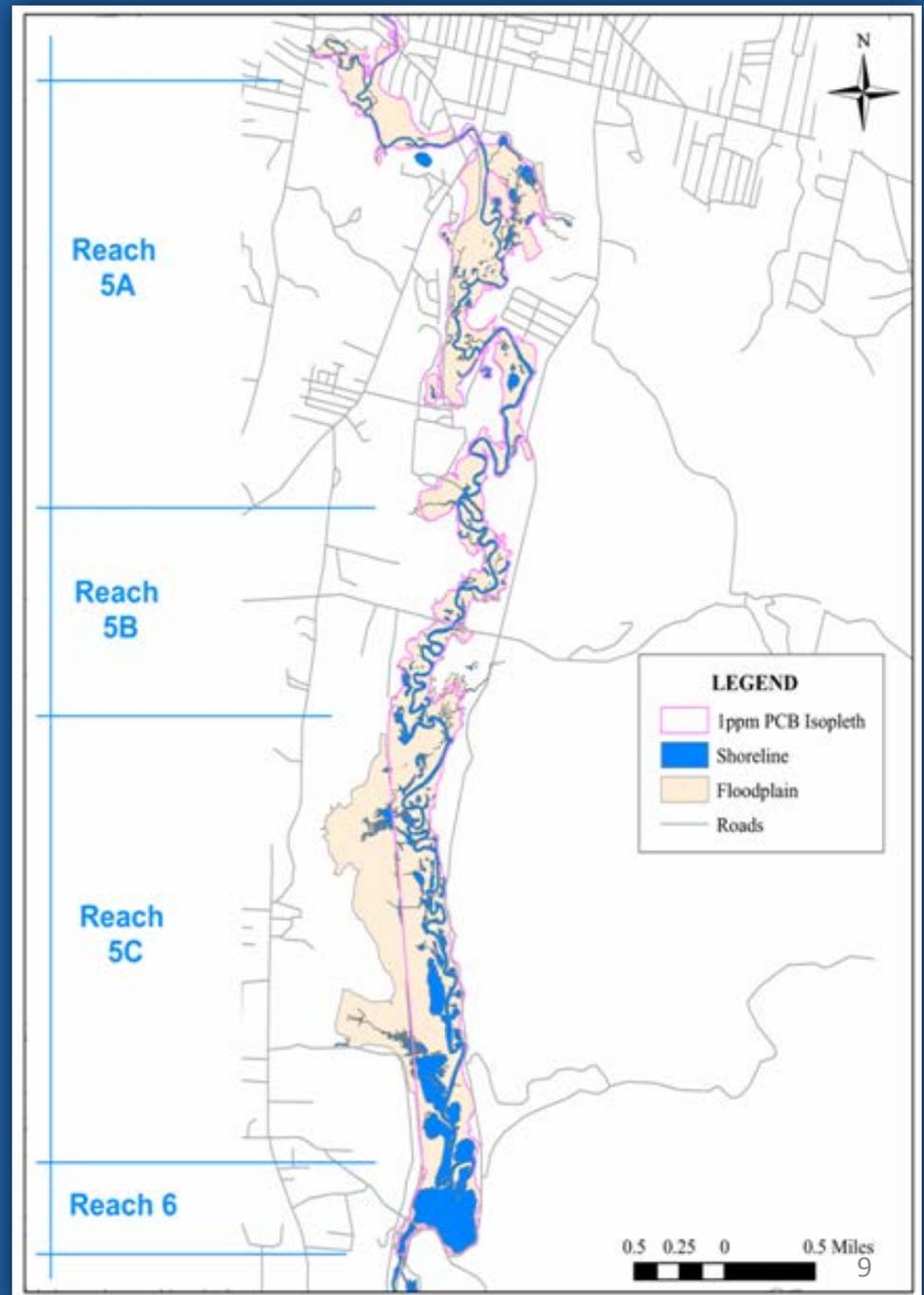
Reach 17  
CT, tidal and  
other Superfund  
sites



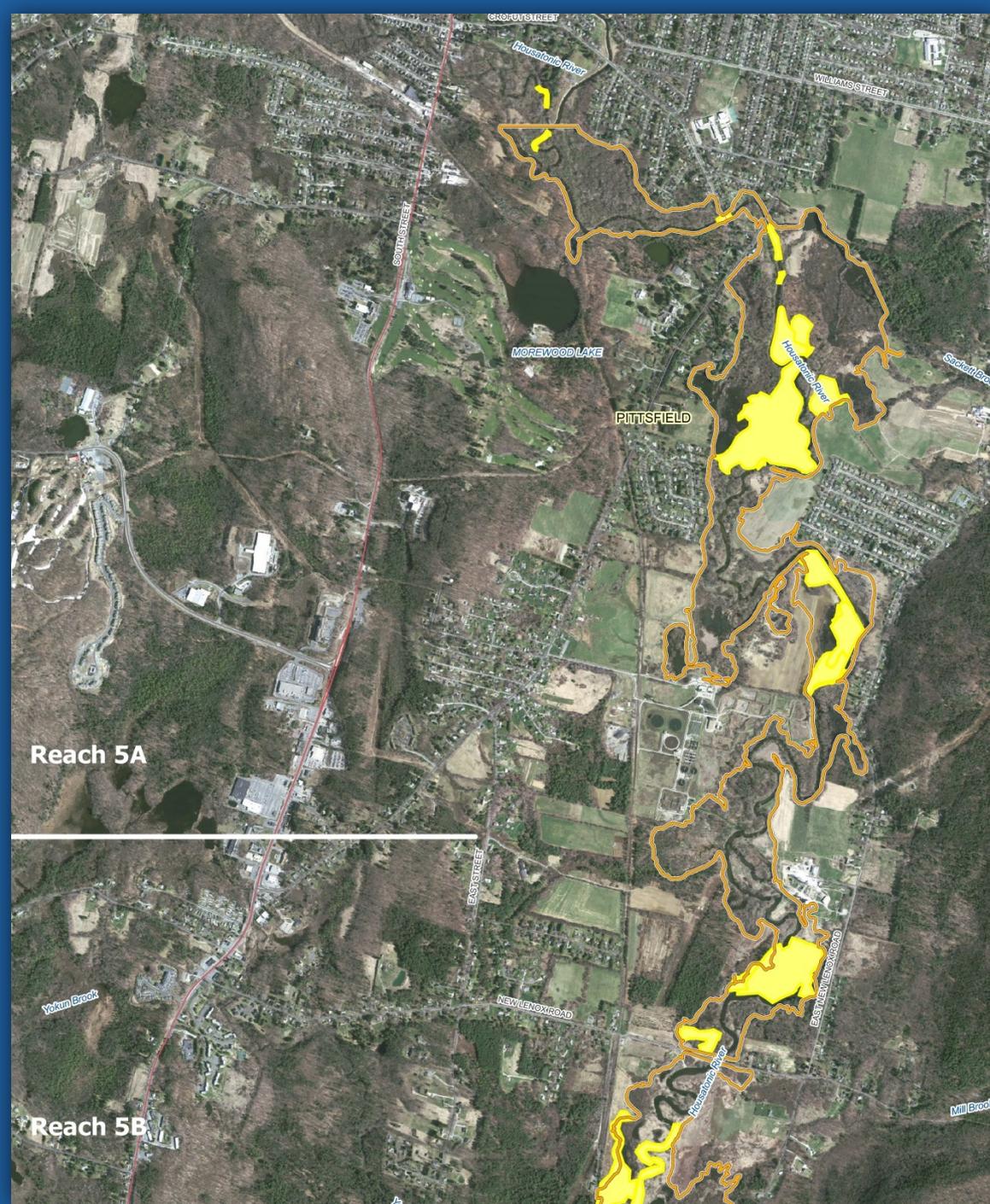
Active Remediation Being Considered in Reaches 5, 6, 7 impoundments (including Columbia Mill, Eagle Mill, Willow Mill, Glendale) and 8 (Rising Pond)

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# Reach 5 sub-reach designations



# Core Area 1 habitat for state-listed species – Reaches 5A and 5B



## Legend

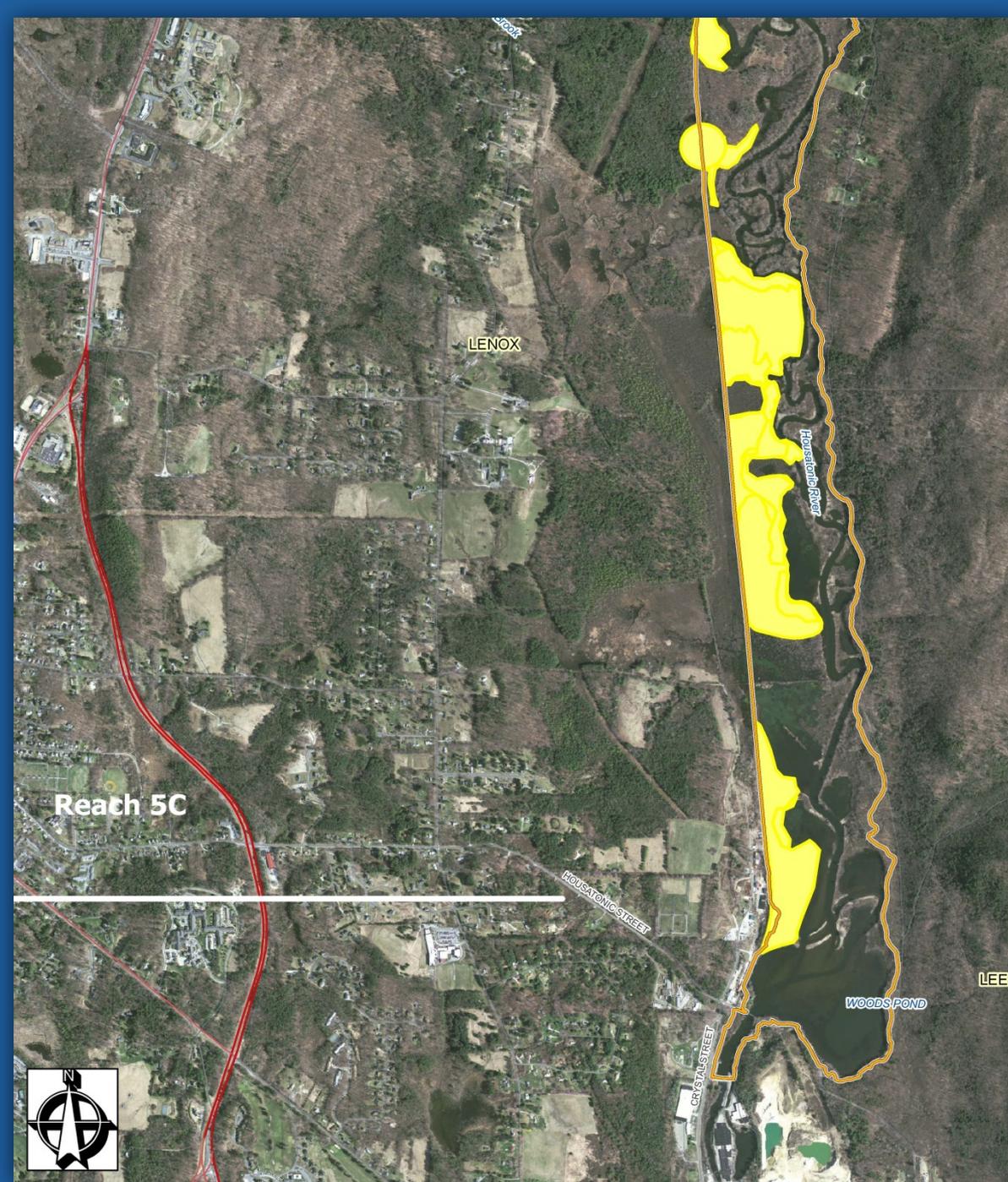
 Primary Study Area (PSA)

 Core Area 1-

These areas show the most important/disturbance-sensitive habitat areas for state-listed species

Date of Aerial Photo- 2009

# Core Area 1 habitat for state-listed species – Reach 5C and 6



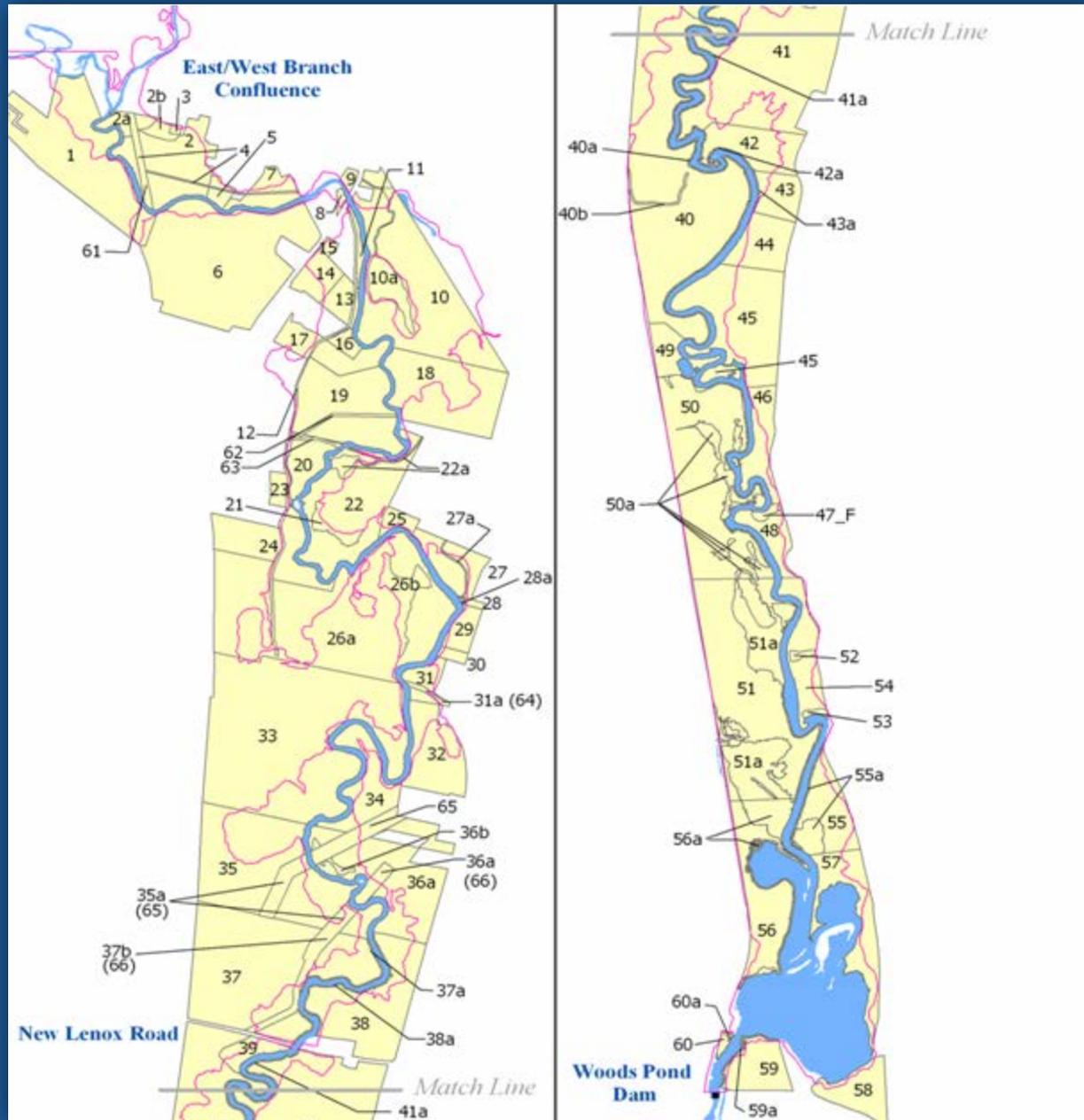
## Legend

-  Primary Study Area (PSA)
-  Core Area 1-

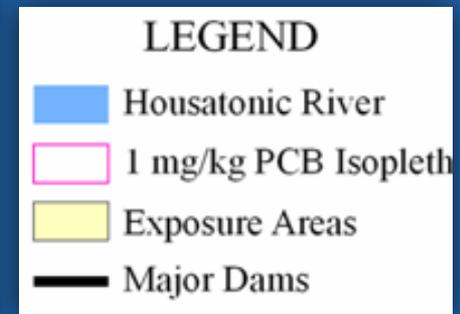
These areas show the most important/disturbance-sensitive habitat areas for state-listed species

Date of Aerial Photo- 2009

# Human Health Exposure Areas (EAs)



Total of 90  
EAs for direct  
contact, some  
downstream  
in Reach 7

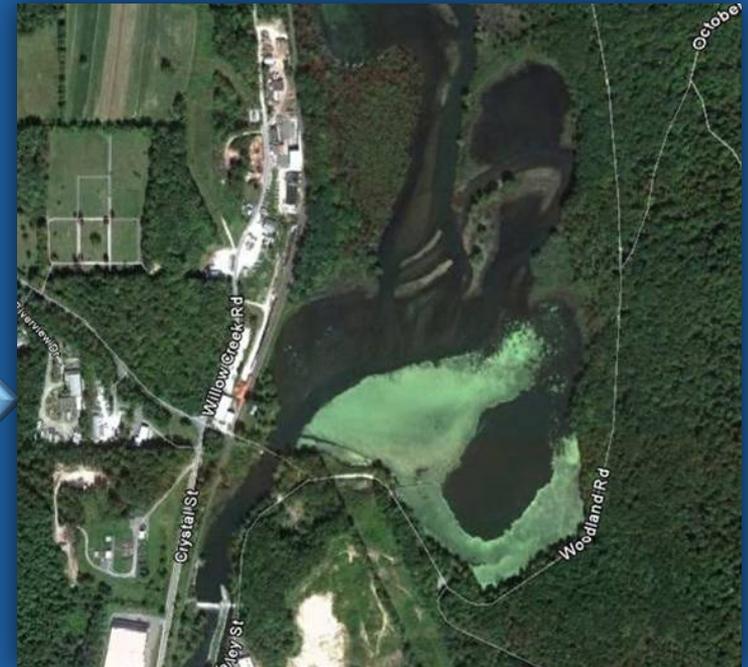


# Remediation Components



River and Bank Sediment/Soil

Impoundments



Floodplain



# Reach 5: Stream Bed and Banks



## Bed sediment removal and capping

- Focus on Reaches 5A and 5C
- “hot spots” in Reach 5B

## Remediation and restoration of river banks

- Focus on Reach 5A
- Address only “erodible/contaminated” areas
- A preference for “soft” techniques like bioengineering and “natural channel design”



# Implementation - Different Options Are Available

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For example, during remediation/capping:

- Construct a road (using cap material) in the river
- Use amphibious equipment
- Use shallow draft floating equipment
- Transport material via conveyor, pipeline
- Perform access dredging
- Use temporary dams/other structures to increase water levels



# Amphibious Equipment

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# Shallow Draft Floating Platforms



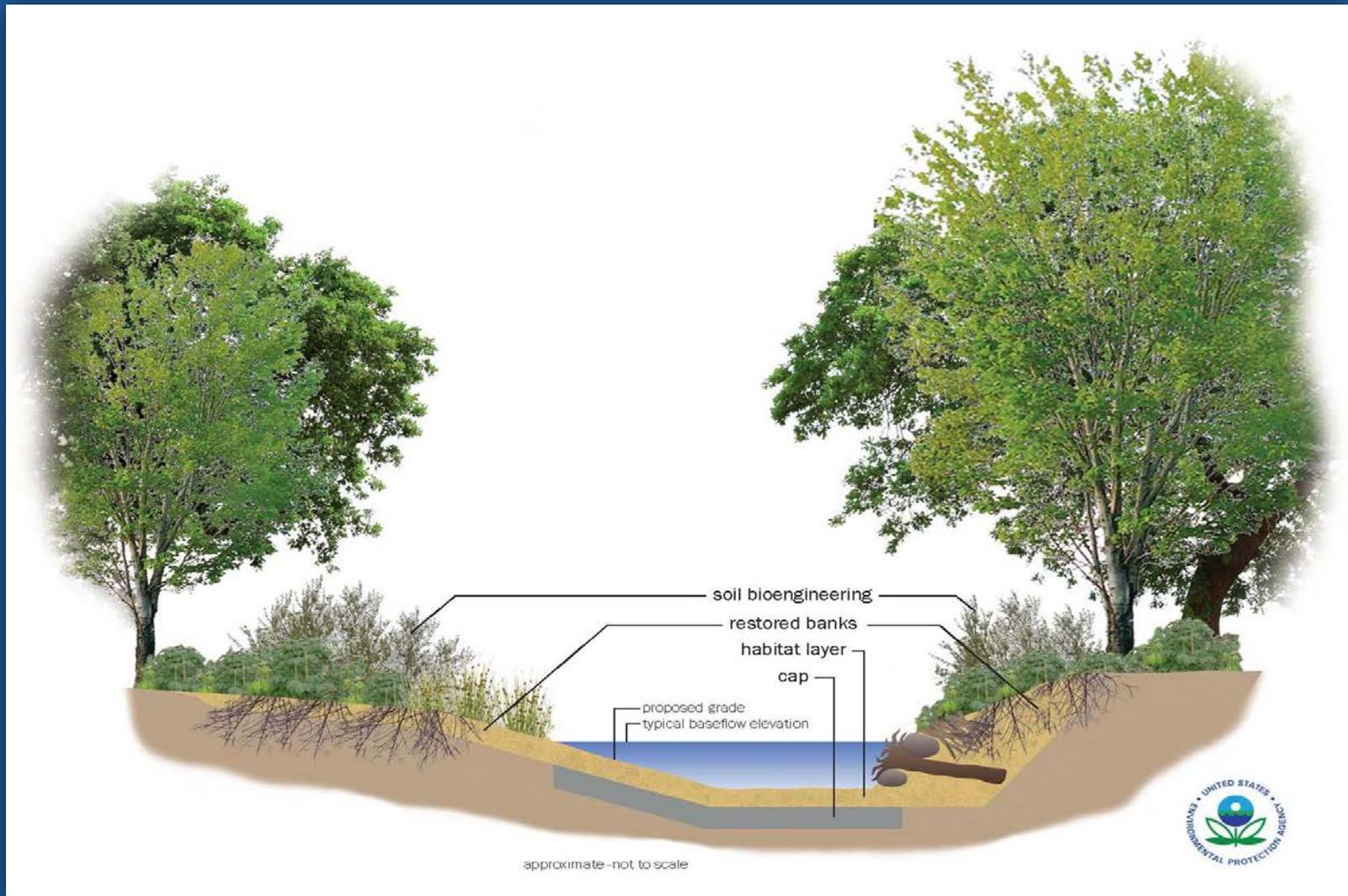
# Hudson River

## Shallow (< 3 ft.) Equipment Used

- Mini-hopper
- Shallow draft hopper

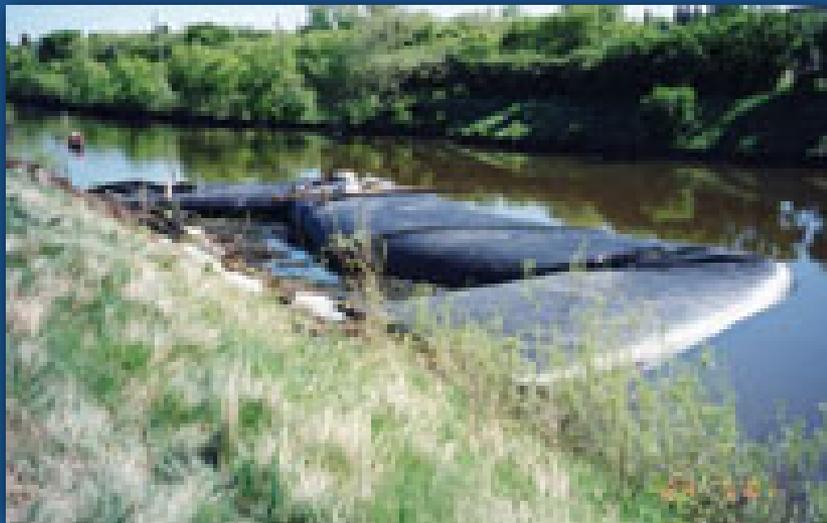


# Capped River Bed and Bioengineering in River Bank



# Restoration

- In-river work
  - Diversion structures
    - Portable dams
    - Jersey Barriers
- Banks
- Floodplain/Vernal pools



# Reach 5: Floodplain and Vernal Pools

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## Targeted remediation

- human health direct contact risks  $10^{-5}$  or Hazard Index = 1
- avoid, minimize, or mitigate impacts to Core Area habitat for state-listed species

## Adaptive approach to vernal pool remediation

# River Backwater Areas

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Sediment removal and capping

Consideration of Core Area habitat for state-listed species

# Reach 6: Woods Pond

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Sediment removal and  
capping, deepening

# Downstream Impoundments

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Columbia Mill, Eagle Mill, Willow Mill, Glendale  
(Reach 7 impoundments) and Rising Pond (Reach 8)



Sediment removal and  
capping

Institutional controls

Strategy in case of dam  
Removals

# Connecticut

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- Control upstream sources
- Monitored Natural Recovery (“MNR”)
- Institutional controls
- State CWA concerns



# Other Remedy Considerations

## Disposal:

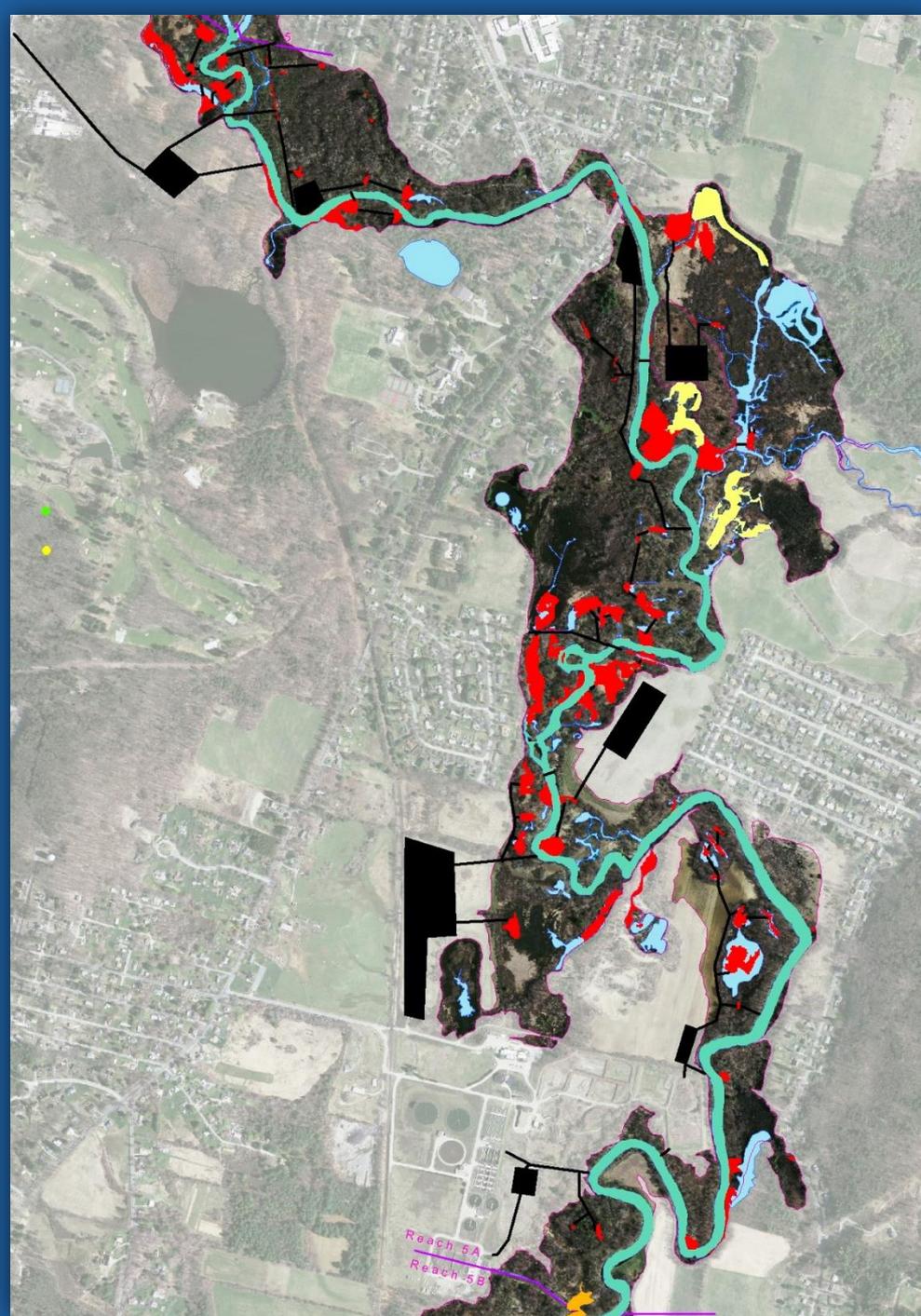
- Off-site transportation of excavated material to “existing” licensed facilities
- Area of Critical Environmental Concern (ACEC)
- Preference for use of rail infrastructure to limit truck traffic



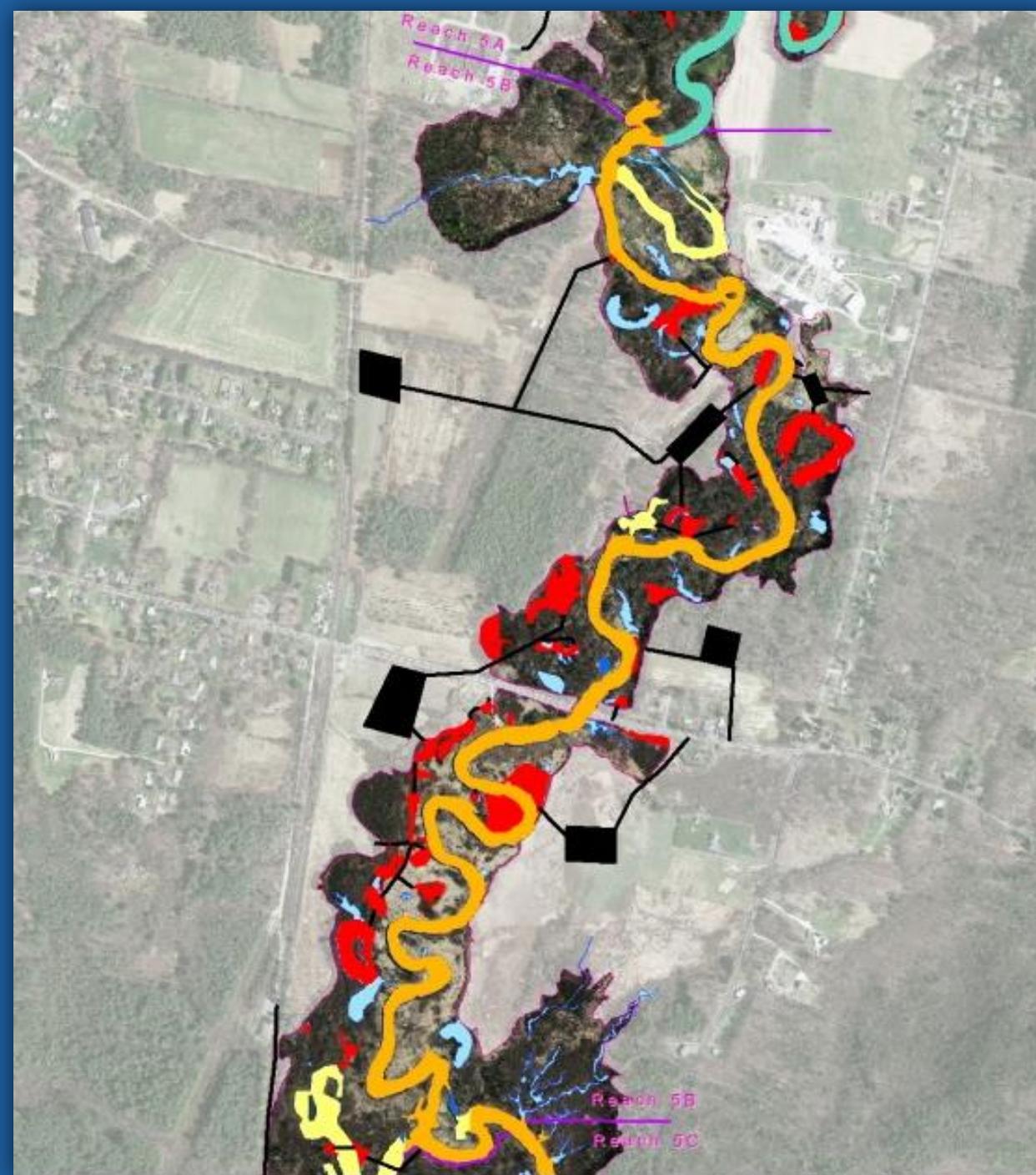
## Other:

- Long-term monitoring, maintenance, and institutional controls
- Innovative technologies

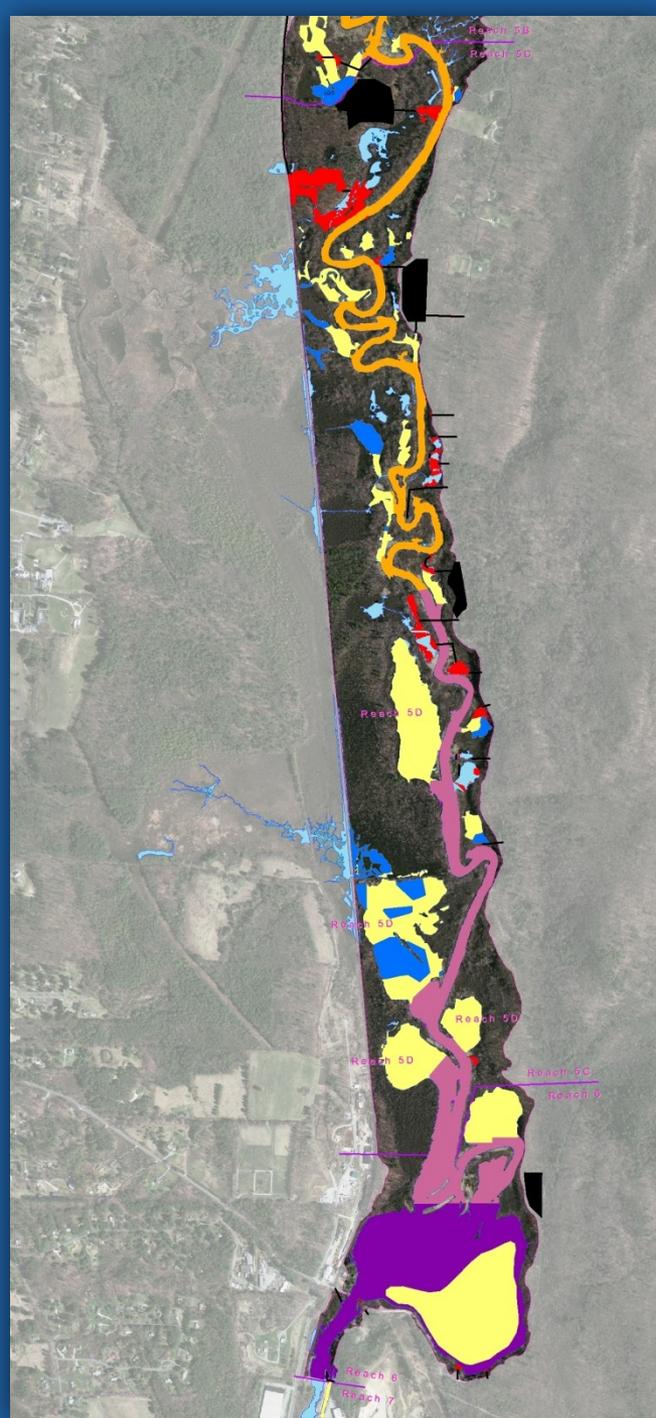
# EPA RRB Alternative – Reach 5A (Confluence to PWWTP outflow)



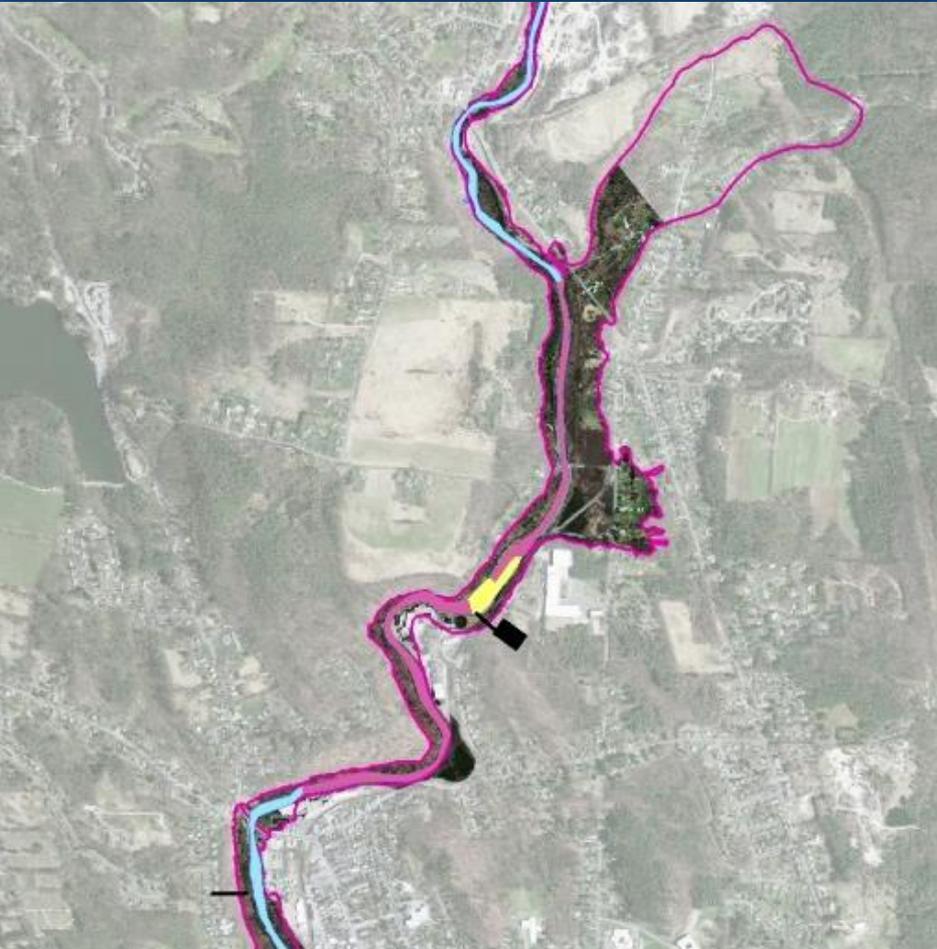
# EPA RRB Alternative – Reach 5B (PWWTP outflow to Roaring Brook)



# EPA RRB Alternative – Reach 5C (Roaring Brook to Woods Pond Headwaters) and Reach 6 (Woods Pond)



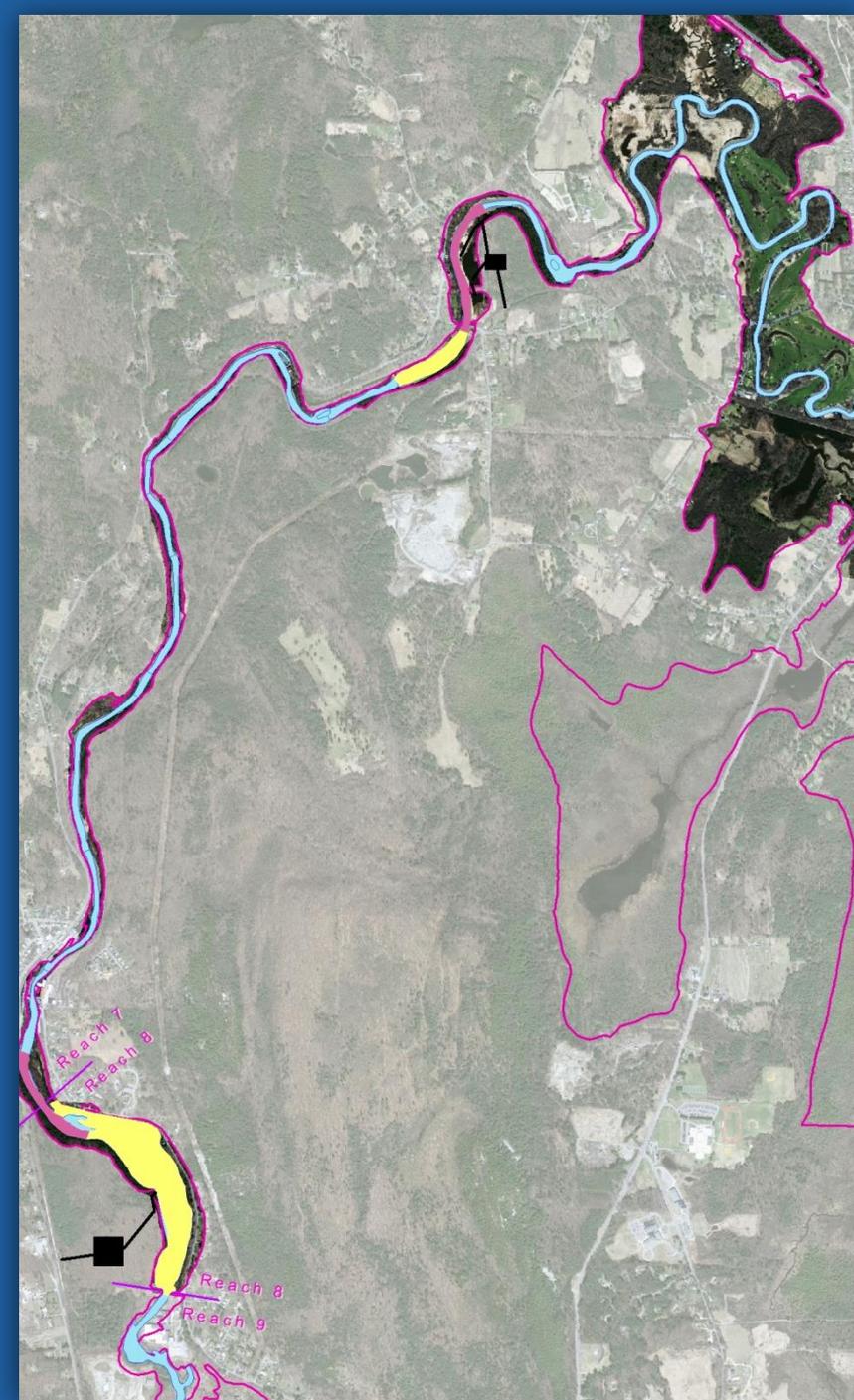
# EPA RRB Alternative – Reach 7B (Columbia Mill), 7C (Eagle Mill), and 7E (Willow Mill)



**Legend**

- Haul Roads and Bridges
- Staging Areas
- FP3A Removal
- SED9A Removal
- 1 - ft
- 1.5 - ft
- Housatonic River
- 100 Year Floodplain

# EPA RRB Alternative – Reach 7G (Glendale) and 8 (Rising Pond)



## Legend

— Haul Roads and Bridges

■ Staging Areas

■ FP3A Removal

■ SED9A Removal

■ 1 - ft

■ 1.5 - ft

■ Housatonic River

■ 100 Year Floodplain