

## CSTAG PRESENTATION - CBI NOTES

April 29, 2020

**PAT 10:30-11:30am**

92 Participants as of 10:40

CSTAG: Receiving input and CSTAG will develop recommendations. CSTAG comments during this call are merely conversation not a position of CSTAG. 20-minute presentation & 10 minutes questions each. Q&A only between presenter and CSTAG.

NYDEC (first presenter); Ian Beilby, Section Chief, Division Remediation, also joining from DEC were, Sue Edwards, Bureau Chief, Patrick Foster, Region 2 DEC General Counsel, Quinn Rush and Chris Monaco, George, Assist Division Director for Remediation, Martin Brand, Deputy Commission, staff. Key Points Made:

- 2<sup>nd</sup> gathering of CSTAG (first was 2015 in the earlier RI phase)
- Been involved since 2011 on sediment (mentioned early involvement on upland sites, CSO and DEP, and spills as they occurred)
- [Covers the basics of the site]
- Position overall: 1) not a threat to human health or the environment; 2) reflects existing state of modern urban activities with urban, dense, maritime, industrial, shipping use, as well as recreation, green infrastructure where possible, recognizing the Creek situation is better now than decades ago; 3) local decision-making encouraged and fulfill vision of the local stakeholders, including local zoning,
- OU3 and site model; toxicity; contaminant sources; resources required to implement OU3; uplands process
- Site Model
  - Document states: Limited GW seepage lateral and vertical due to pump and treat systems; GW generally filtered by soils; major influence is East River, minimal contamination from up Creek; limited NAPL free phase in this part of the Creek
  - DEC review data: GW seepage rates should be net, not gross, which would yield higher COPCs; GW flux still under discussion – complex system – lateral GW inputs likely higher than estimated; tidal pumping affects pore water; there is migration up Creek of COPCs in upper half mile, so . . . for downstream?; and, observations of sheen, which would be free phase in both surface and subsurface in OU 3
  - Figure at 1.7 mile: thinking about migration into this part of OU3 and in fact see where dredging proposed is upstream indicating likely migration
  - Figure at mile 1.5 or so shows free phase detections; surface and subsurface compared to upper reaches, not as significant, but still quite present – document needs to discuss this in more detail
- Toxicity

- Benthic; 10-day survivability assay was quite low, even in downstream, as compared to reference areas – this needs to be given equal weight to 28 day and other studies
- Source to benthic hasn't really been determined at this point (free phase? TPHs?). Difficult for us to support alternative without clear cause for toxicity that appears to be affecting benthos
- Figure (BERA), shows 28 study survivability ok, but going to 10, not so good
- Early action needs to address survivability; DEC supports EPA comments on RI OU1 regarding this
- Contaminant sources
  - Need to be better understood; COPCs increase from 0 to 2 miles in surface sediment
  - Is the Creek through mixing adding as source itself?
  - Transport mechanisms not explored/explained in the OU3 FFS
- Other activities
  - Concerned that OU3 will impede progress on OU1
  - Estimated OU3 alternatives in the \$80 million means lots of staff resources for review thus taking time away from OU1 generally (and the higher concentrations in the Upper Creek)
  - Current COVID state calls into question what is implementable at this point
- State's Upland work
  - There could be non-DEC addressed Upland sites that need to be incorporated into the EPA Superfund Process
  - DEC reviewing the 30 to 40 site projects that it is working on (spills, brown fields, remedial work under state program)
  - We imagine the uplands as a potential OU as part of Superfund

#### Natural Resource Trustees

- High levels of contamination upstream
- Benthic organisms and risk and toxicity
- PCBs in the sediment concerned about fish and human consumption
- Doc says dredging to 2.5 feet, with some capping – wants greater characterization of this area and the benthos which varies from places in the creek. Really interested in recovery of the varied benthic habitat; better sense of habitat, diversity of species
- The alternatives were limited to dredging and capping at different levels or PRGs
- PRGs are still some issues with current loading, background but for Superfund
- Straight capping or sediment amendments were screen out and not sure why
- Talks about minimizing subsurface migration/recontamination -- seemed based mostly on the hydrodynamic model, but as you get closer to the shoreline and shoreline type. It's not just the longitudinal forces (tide), but waves, prop wash, etc.
- Want more connections to site based conditions and how coordinate this with upland activities (like shoreline work including restoration)
- Consider design issues to address wave action on shores, livable and sustainable shorelines and how this figure into the OU3 proposal

- I understand this early action and part of OU1, but there are issues with PRG, reference and background, treatability
- If the goal is to eliminate hot spots, seems to me other hotspots could be tackled first. Why these? I understand lower part rationale is at equilibrium with East River, but not convinced yet

#### Questions

- Are the proposed alternatives comprehensive for the interim remedy? Not comprehensive as outlined in the vision plan, and thus a problem
- Living shorelines? Generally, has a more functionality for habitat and wave energy management as compared to bulkheads – different shorelines have different eco values so think about mud flat, transition zone, can have hybrid approaches that provide more eco value

#### CSTAG Introductions

- Carl Gustavson, EPA Office of Superfund, Kimberly Keckler, Region 1, Project manager, Doug Tomchuk, Region 2, Randy Sturgeon, Region 3, Jim Stearitt, Region 5, Baumgard, Region 6, Sean ??, Region 10, Laurence Birkhard, ORD, Bergen (??), Mark Greenburg, OSWRA, Matt Lambert, Superfund Science branch, Christine Poor, RRB, Mike, Env Response, Rich, ERT, Earl, Army Corps

#### **SOFIA 11:30am-1:30pm**

Fluctuated between 91-98 participants

#### **Newtown Creek Commercial Navigation Analysis (Lisa Barron, USACE)**

##### *Presentation*

- EPA hired ACE to conduct navigational analysis
- Goal: identify current use on the creek and anticipated future use to inform the remedial process:
  - Looked at dredging history
  - Port data
  - Cornerstone: birth by birth analysis and reaching out to users using NTC and getting insights from them re: how the use the creek now, and plan to use it in the future (e.g. that if dredging/cap happens needs to be appropriate for operational and functional analysis of this creek).
- Questions asked:
  - Current vessel size
  - If the creek was to be continued to be used: looking at economies of scale, birth-by-birth
- Analysis includes all users except for the city given they have the treatment plant, and they have to coordinate a lot of people about this in addition to their future vision
  - Have everything but the city's input

- Federal nav channel - created an interactive map to plot users as well as reaches for authorized channels and overlaid the last conditions survey conducted, can go in, and see existing depths in a particular area.
- Creek has been dredged 1922-1974, last time was 2014, current authorized channel depth from East River to end of Reach E (before English Channel of H), this is authorized at 23ft channel depth, once get into reach H, through other uses J (20ft), K (12ft) >> when looking at these channel depths we looked at the responses from our birth-by-birth analysis have preliminary conclusions
- Conclusions: preliminary results on the navigational analysis
  - 1) The main channel cannot be deauthorized. How can it be deauthorized or authorized, or to what depth? However, there are areas that can be deauthorized that you won't have to worry about a navigational channel (Reach L, G, or I, segments of K - can be deauthorized pending the input from the city).
  - 2) A major influence on interim remedy or final for OU1 is where the channel can be modified for authorized depth -23 ft should not be changed all the way up to Tinder Morgan.
    - Influences interim remedy from D-J we found that 23ft can be reduced. Influence is based on the next user after Kinder Morgan, who is all the way in J (TnT or Empire), they are authorized at 20ft and we might be able to go less (determining factor for this number is not out, but would influence the largest target area of the remedy). The analysis is pending to tackle the depth that would influence the remedy.
- Regulatory framework and operations and maintenance
  - After reviewing FFS, major pull out: dredging and capping is with current bathymetry. Cause rivers and harbors act section 10 focuses on obstruction (bulkhead, breakwater, pier) if it modifies the course or location of navigable water, but section 14 is important to ACE, this should be an A-RAR, which prohibits or ensures that federal projects continue to provide intended benefits to the public (mandated by congress re: civil works projects, is maintaining the authorized channel). If any changes to authorized channels that impair the usefulness of that work would need to be a process (triggers a 408 process to gain approval by ACE - a recommendation to chief to the secretary of the army to grant permission that will impact the project).
  - Secretary concurs that it will not injure public interests - temporary action, 408 is one path that could go forward
- Easier process -- figuring out the modification for the federal channel and then legislation modifies the channel depth (this is simpler and the best process - letting folks know that this will need to be considered, and in FFS just highlighted section 10)
  - Whichever one is the choice - whatever course, ACE and NY District is willing to help advance that particular aspect (whether interim or OU1)

Q&A

- Laying out the sections of the act, do you consider it that if materials are removed and then added back up to the grade that existed prior to the activity will be consistent/not consistent with the RHA
  - **Lisa: key aspect, the end goal is to be able to maintain the channel. There is concern that if this is considered a remedial cap (covering/sequestering contaminated material), if we are to maintain, we would not be able to maintain that authorized channel depth. This would impact the usefulness of our project, which would impact our ability to maintain the area for future O&M. Fi current depth is 18-20ft and they would need to dredge/over dredge and do buffers, then they would not be able to keep the authorized feet. So, section 14 would allow dredging.**
- Was the nav channel analyzed to see if complete removal was possible?
  - **Lisa: This was not a part of our nav analysis - we focused on use.**
  - **EPA: Stephanie will talk about nav issues and related to the site during their presentation.**
- If the channel is authorized to 23 ft, and existing sediment sets in at 20 if we have to do remedial action, we would have to take it down from 23-25 and then put two feet back?
  - **Lisa: yes, at a minimum. We have authorized channel depths with 2ft over dredged. ACE has voiced that there would need to be some level of the safety factor. Dredging is not a precise activity, so maintaining the integrity of the cap is important. Whatever this number is we need to be able to account for over-dredge and additional dredging for the cap.**
- Mentioned ACE likes to use a 2ft overdrive, and safety factor. I understand it's sometimes 3ft. Is that what you would typically apply.
  - **Lisa: That number has been recommended before. You are on target, but that number is really about our operations division. There is a lot of conversation about the safety factor, it has been used on other projects.**
- For there not to be an issue from ACE perspective, that the top of any material that would be placed after removal/dredging, would have to be 5ft below the authorized depth (w/ 3ft safety factor)
  - **John F.: math is clear, the issue is not resolved as to whether and what degree a safety factor applies under these circumstances. This is not settled with our discussions with the corps, or relative to other projects that are similar. Please don't fix in your mind that this is settled.**
- What is the timing for this, is it a memo, a quick process, or is it substantial?
  - **John F: we signed the ROD after counseling with ACE- we signed ROD first and then undertook the remedial design with a private party, which led to clarity to seek a sponsor and go to add language that changed the described channel in the Passaic River during the 2018 ORDA bill. Cory Booker agreed to be the sponsor and this change in authorization was embedded in that law several years after ROD was signed.**
- Randy (region 3): surprised about the safety factor and could envision ACE not wanting to pay for the extra 3ft.

- **Clearly, the safety factor is up for consideration, I was just providing some context. But this is important.**
- Randy: if this is an interim remedy do you have to meet a-rars, or does section 408 matter?
  - **Lisa: I asked about this and there is language in section 14 that states it can be temporary or permanent, that you have to go through this process. Granting process language includes temp/perm and would have to go through the process or through the secretary of the army.**
- Would EPA look at this as an admin process? And not something we have to do anyway? In CERCLA we don't have to do admin processes and curious how ACE views
  - **Lisa: would be similar to lower Passaic, would have to have gone through the 408 process and that particular issue is not waived under superfund. If you didn't get an authorization change, either or. I would assume if there was an exemption like that, we would have been able to experience it on Passaic**

### **Willis' NTC CAG presentation**

*Presentation: see slides [HERE](#) [insert link].*

- In general, opposed to this particular piece of NTC being cleaned up first because it is the cleanest.
- There are other sites that would benefit from an interim action.
- Diversion of superfund resources
- Leaves contamination in subsurface sediments
- OU3 Uses most contaminated waters for reference areas
  - Insulting our community, appalled and don't understand the comparison - it seems like we should use the East River, and not contaminated tributaries.
  - This is not a goal to use these as references - RI used a variety of areas and used as mix and this is not the case, all 4 sites are heavy industrial and heavy CSO influenced.
  - Gowanus utilized NY Bay and NY as reference areas
- Potential for recontamination.
  - A lot of concerns
- Unclear plan for long-term navigability in lower 2miles
  - Main concerns of the CAG is understanding navigability and needs to have long-term navigability.
  - Lisa's pres. was helpful
  - Talking about a 2ft dredged, there are places within this section that re 15-16ft deep and the legal depth is supposed to be 23ft. So, I need to get down to 25ft. If dealing with a spot like this, a 2ft dredge won't cover it. In some places there will need to be 10+ ft of dredging to comply with ACE
  - Concerned, this was taken as a surface sediment - on navigability want to have further convos with ACE and EPA, especially in tributaries where there has not been maritime use.

- If we were to require delisting of some sort, if we went through the 408 process, it would make sense to do all of NTC at once and go to congress with a full proposal for the whole creek. Doing a piece-meal thing seems far off.
- Concern for community impacts
  - Dredging in most traffic-heavy parts of the creek. IF OU1 ROD says that this EA isn't up to snuff, and re-dredging has to happen will be super disruptive
  - Traffic on the bridges: 2 in this section, and it is a huge disruption to local streets when tugs are coming through. Note: whether this plan or another: explore the option of trying to use barges/boats with low air draft to minimize impacts to local neighborhoods
- Use of incomplete unvalidated models
  - Cart before the horse - shouldn't be pursuing EA before understanding the whole site.
- Too early to determine cleanup goals
  - OU1 is the main priority - and looking at other things is a waste of time
  - Technical questions
- Conclusion:
  - Seems like there is a lot missing in terms of data that were used, and levels.
- Future uses of the creek
  - It is a significant industrial area, but we have a shared vision for the creek that has mixed-use - industry & recreation/restoration. This exists already and in the past decade has changed - 12 years ago no access points/no recreational boating and now there is momentum to reclaim the water way and have that mixed-use be a part of the cleanup.
  - Concerned about the framework of cleanup for the waterway only thinking about it as an industrial waterway, when there is shared recreation and restoration.
  - Opportunity to be doing more with the shorelines

#### Q&A

- Our CSTAG principle about communication and interaction with the community group. Are you comfortable with the level of communication and input you get from the region?
  - **Willis: For the most part, we are satisfied. The facilitator has been a huge help and EPA has been very responsive to our concerns and open about information. On the EPA side we feel good about it. This plan we were confused by and they have been forthright so far but concerned that this is even being explored. Community participation has been good and would like to continue having conversations. I would love to talk more with ACE on the topic of navigability depths.**
- Sean Cheldrak (Seattle CSTAG): do you feel like you have seen any info on prop scour, and if so, are you satisfied?
  - **Willis: We do see prop wash around the creek. A concern when some of these tugs are working, they are essentially pushing a barge against a wall and churning up sediment at the bottom. I don't think we have definitive information to say that this is an issue. But needs to be integrated into a**

**conversation that if there is prop wash it won't be bringing PAHs to the surface disrupting a cap. The conversation that needs to keep happening.**

### **NYC DEP Primary Concerns with OU3 FFS:**

#### *Presentation*

- RI/FS for site is on-going; CSM for OU3 FFS - East River is the dominant source for these first two miles, but that NAPL
- CSM is draft/incomplete - not clear to us how these elevated areas became elevated
- Theoretically an early action could include Whale Creek and tribs. beyond the first 2 miles. Big picture comments.
- Data: PCB/PAH concentrations across the creek > high concentrations, but see in other parts of the creek which are potential sources for OU3
- Technical slides >> questioning of conceptual site model - on the left are data from OU3 miles 0-1 and 1-2, we know there will be elevated concentrations, but we don't understand the source of this or if it will be addressed.
- Notable that all of these references areas on the right have some of the same inputs as NTC they are industrial have various point sources and CSOs and Brooklyn navy yard is right by the East River
- One would think they look more like creek mile 0-2 if the SCM and east river were the controlling factor
- Sediment trap data: placed in OU3, which were specifically designed to not be subject to disturbance from prop-wash or hips. We noticed that the concentrations are very different than what is seen in the East River. High res cores from OU3 in first two miles is similar to what you see in the sediment traps - suggesting there is another source which we believe is NAPL, some also had sheen in them after being deployed for several months
- PAH data: similar patterns to PCBs - concentrations higher than the East River and similar to what is seen in sediment traps
- Important line of evidence that shows what might be lacking for the CSM
  - Contaminated groundwater
  - For OU1 - there were data collected from native sediments below the creek to characterize ground water and elevated concentrations were detected.
- Some of the most contaminated groundwater are where the EA site areas are and contributing to contamination
- NAPL is contributing, seen by the community in dry weather and low tide. We did our own program to try and characterize these samples. Concentrations are high and after evaluating various seeps. We do think these are an important source.
- Other unknown sources that we did not collect - suspect that a lot of upland sites are contributing NAPL and contamination to both OU1 & OU3
- NAPL migration from subsurface sediments occurs throughout the creek - outside the RI FFS and EPA oversight have collected data from these NAPL sheens and are showing high inputs especially (PCBs 9ppm, and PAH over 11XX)
- Ebullition has been observed by multiple kayakers on the creek. Red dots = gas bubbles w/ NAPL are observed

- East Branch higher but continues into OU3
- Sheens are a regular occurrence and can sometimes cover the entire creek, eventually they dissipate.
- Delineation of NAPL extent in sediments
  - NAPL delineation is critical for understanding toxicity and ongoing sources
  - There has been disagreement on this, which is why did their own study of NAPL
  - Did 200+ NC2 borings
  - Results of this study: happy to answer questions or do an entire separate presentation. Map photo - presence of potential NAPL from 2-8ft w/in OU3
    - Different types of NAPL
  - Mockup estimate of areas that are NAPL impacted across this creek both in the surface/subsurface
  - NAPL mobility in OU1 is still being finalized, but important to understand this before OU3 is conducted
- Concern about monitoring program:
  - Sediment traps/surface sediment sampling will be applied in OU3 and some of the same probs with interpretation/implementation will exist. Might not catch bottom up recontamination from ground water
- Recs on slide 36
  - Update/validate CSM
  - Catch ongoing source (NAPL groundwater)
  - CSTAG guidance from 2015 should be followed
  - Need to characterize and control upland sites
  - All related to OU1 and ongoing effort that overlaps with ongoing stakeholders

#### Q&A

- Models for the CSM are unvalidated. What in your opinion would be needed to validate the models?
  - **Have to match up with existing conditions and be able to explain where contamination has been observed and also take into account all the sources. CSM is never validated in the same way that another model is. It is important that it makes sense in terms of what is observed.**
- Two things I heard: 1) observations 2) predictions, they relate to what we would expect for current concentrations in the lower portions as well as other sources within 0-2 are producing the kinds of concentrations we see. Or, are you focusing primarily on the ground water de-ebullition issues?
  - **Looking at slide 8 we see an elevated area of PAH concentrations, but the CSM sort of suggests that there is not a clear explanation for that. Then, we look at groundwater data and see it coming in that is contaminated and when we see other sources when we sampled ebullition/NAPL sheens it sort of matches up. The same goes for sediment trap data.**
- Fingerprinting in sediment traps?
  - **Don't know offhand besides from broad categorization of tar-like versus oil-like. A lot is a mix and it's degraded. Newtown is the basis for**

**groundwater that ends up there. This is our data that has been collected outside of RIFSS. Hasn't been categorization of upland groundwater.**

- Randy: Has the city or others taken upland cores along the riverbank looking for NAPL?
  - **Yeah, DEC has a lot of programs for sites at various stages for cleanup - a lot of remedial systems. There isn't a single database that pulls in data from within and adjacent sites.**
  - **Ian, DEC: Provide some input on the upland NAPL question. One of the largest oil spills is on the banks of Newtown Creek. There are several other refinery sites where we have recovered significant amount of product. Certainly, there has been a significant effort put into recovery and remediation of NAPL sources. Products in banks and around site that continue to be the bane of spill and Superfund program. They will be part of upland assessment process - document where they are occurring and what sites relate to.**
- Didn't see anything in the summary about recognizing the interim actions aren't expected to address all problems but quickly address risk. Is the City supportive of preferred alternatives?
  - **We are not against it in principle as far as early action goes. Concerns mostly with CSM and ensuring that it's successful.**

**MAGGIE 1:30-2:30pm**

### **Tom Schadt presenting USEPA CSTAG Presentation: Newtown Creek OU3 FFS**

#### *Presentation*

- Consultant to Newtown Creek group
- OU3 Early Action - Overview
  - Proposed EA is an interim action, subject to review as OU1 remedy is finalized
  - Primary objectives: accelerate recovery of surface sediments in OU3 to long-term equilibrium conditions and reduce exposures to COC
  - Sediment removal and replacement with clean cover in Target Areas
  - Performance Monitoring Plan - lot of uncertainty solved through PMP
- Map of OU 1-3 - this site is cleaner as nearer to mouth and more highly contaminated as move up. Morphology change of channel in OU3 - possible that transition zone is having an effect on highest levels. (also consider East River influence diminishes upstream, construction of K-Bridge). Channel shape is very artificial with a hardened shoreline in an urban setting - constraining factor.
- Benefits:
  - Consistency with initiatives out of Superfund reform process - speed things up (Willis may disagree about community benefits)
  - Info collected from 2012-9 has resulted in well-defined CSM for OU3 that supports an EA
  - Inform future remedy decisions
  - Will reduce exposure to COCs
- Effectiveness & Sustainability: Will spend an excess of \$80M for this action

- East River is dominant source of settling solids to the sediment bed and COC concentrations in surface sediments are declining through time, consistent with the east River influence
- In the lower 2 miles of the site, the sediment bed is net depositional and stable and subsurface do not pose risk.
- Ongoing external inputs and in-creek processes are well-catalogued and likely will not result in remedy failure
  - Groundwater program on Newtown was designed by EPA
  - Quantified NAPL and ablation (?) in a way that's never been done before, EPA said not to further quantify. NAPL categorization program and results led us to this approach. Convinced that it won't be a recontamination problem. Saw results today that are done in a way that is referred to "at-risk" - not verified
- Exposure to COCs and risks to human health and environment are lower compared to the rest of OU1
- COCs and RALS
  - 3 drivers: PCPS, PAHS, and copper - occurring at part of process when haven't finalized risk assessment
  - RALS: evaluated and selected by USEPA based on analysis of available RI data and best professional judgement.
  - Consider that part of the creek with will not change
  - RALS are not risk-based; risk-based values are under development as part of OU1
- RAO
  - simple because it's an interim action but keeping an eye on broader goals for the future - reduce exposure and risk with this remedy
- Alternatives:
  - Depth of removal: important history on navigation (not been dredged deeper than -18 since 1950s); 2014 dredge was a limited event tied to DEP sludge-removal process, didn't affect site or go to -23 in main stem
  - Navigation is a tough issue - let the region talk to you more about this as we move through the process. We think navigation is not going to get solved for interim action but should be part of OU1.
  - Go with today's elevations and not putting in any permanent obstructions to navigation channels
  - Bookend approach with low/high RALS and hybrid. Long-term SWACS getting to equilibrium calculations
  - Most of what's happening the hybrid is very little change in what's happening with the PAH - little more area with cooper; Alternative 3 bringing back
  - Alternative 3: preferred - lower PCB RAL, while also achieving risk reduction for other COCs (high RALS) and cost-effective.
- Action-specific Interim Performance metrics
  - Evaluate whether the EA is meeting the OU3 RAO and is furthering progress toward the anticipated OU1 RAOs

- Develop robust performance monitoring plan - tiered approach, details worked out with R2, helpful to the rest of the site in understanding more about impacts on upland sites, shoreland seeps, etc.
- Benefits: take a big piece of site and move onto next phase; try out sediment remedy practices for other areas; empirical data about effectiveness of dredging and cover; feel like we have been sensitive and don't feel like we are impacting OU1's schedule
- NCG's position
  - EA will accelerate the timing of remedial action in OU3 consist
- Conclusions:
  - Data came from programs that EPA reviewed, supported, and sometimes designed.
  - Don't have risk-based numbers, reasonable RALS with well-sued data
  - Risk-based benchmarks at end of day and confident can meet

#### Q&A

- Randy: Superfund were to address current and future risks - in your plan, you are assuming that the deeper contamination - no interest in deepening it below cap design, so cap would be permanent?
  - **Navigation is tough - look at interim action on own and what's the prudence of creating deeper holes when it's unlikely that the rest of the site would see anything that deep. If we do have to go back for deeper elevation or someone else does - the cover is removable - not a permanent obstruction.**
- Sounds like you are somewhat ignoring future potential risk for future deeper need?
  - **Taking an educated assessment on what's been done in the last 70 years and how the uses of the nav channels changed and where things could realistically go.**
- Mike, Beuthe, ERT: Polygons to represent target areas - do boundaries represent complete extent that needs removal or is there need to get further into them?
  - **RI data set with polygons on larger scale >recharacterization study>designed a program to infill between did/did not exceed; tiered analysis of steps in between there. Feel well-refined. Deliberate step to refine as much as possible for feasibility study.**
- Randy: Hard remediating sediments on the lower end of contaminant spectrum - what is the risk reduction you expect from this?
  - **David Howry may be able to give % figures. On a shorter-term basis - let's make sure we get in a range of reference areas. RALS data came from reference areas. Are we getting the lower part of the system to that? WE don't have risk values yet, started RBG with EPA. We have proposed numbers and they are looking at them. Risk criteria and reduction for each area. Confident we will meet them for Copper. Think that PCB will be too low. In OU3, we see a progression of risk reduction that keeps getting smaller and smaller as you take on more area - don't have knee of the curve sort of information.**

- Randy: Once you get OU1 done too, one of the earlier presentations talked about one swimmable river - what's your take on that?
  - **On the swimmable side, don't think from a circular perspective, that will be an issue. From a bacterial issue, I do think it will be but not in the purview. I have frustration when I see that. I don't think the system will be fishable given its harbor position and PCBs. Think fish advisories will be there for the foreseeable future**
- Lawrence Burkhardt: Interim monitoring plan - any biology measurements at all or only chemistry?
  - **Yes - we want to get another fish tissue baseline set prior to any system disruption. Other things would be based on how we see results unfolding. That might take us in the direction of another round of tissue testing. WE will be keeping our eye on it - new identified baseline piece that will start off soon.**

*Stakeholder input session:*

- Everyone has all presentations from invite
- Stephanie Vaughn - next piece for internal EPA folks is scheduled to start at 2:30pm