Newtown Creek Community Advisory Group (CAG)
Technical Meeting Summary

December 2, 2019
Sunnyside, NY

Summary of Presentations and Discussion[1]

- Questions and discussion regarding the material presented are included in bullets in the sections below.
    - *Direct responses from EPA are in italics.*

Early Action Proposed by Newtown Creek Group

Tom Schadt, with Anchor QEA, the shared consultant for the members of the Newtown Creek Group (NCG), presented an overview of the NCG's proposed Early Action (EA) approach.

Early Action Objectives and NCG's rationale for proposing an EA

The scope of work for the EA outlines how a focused feasibility study (FFS) will determine if the EA is warranted. NCG has signed an order with EPA to look at part of the site, called operable unit 3 (OU3) to conduct this FFS. A determination will be made under that order, and then another order would be signed to do the EA work if it were to go forward. A record of decision (ROD) on OU3 would is expected in the middle of 2020. If the EA went forward and a remedy were to be implemented, substantial monitoring and performance metrics would be done to assess its effectiveness.

The data from the remedial investigation (RI) and the conceptual site model (CSM) showed some things in the lower portion of the Creek that suggested it would be a good candidate for an EA. In the first two miles, there is a large influence from the East River and not as much contribution from the tributaries of the Creek, which tend to deposit out higher up in the Creek above mile 2. Groundwater flows are very minor in the lower portion. There is also less influence of the NAPL and ebullition in the lower two miles. In general, the surface sediment concentrations are generally higher above mile 2. Because the lower end is farther along in terms of deposition it received and has cleaner chemistry, the remedial action (RA) could finish off the lower part of the system, as opposed to the higher parts where concentrations are higher.

Whereas an EA often is taken to address a very highly concentrated area to take care of the worst contamination, that approach would not fit the model of the Creek, since miles 2 and above are more heavily contaminated and more complex due to ebullition, groundwater influence, and other features. NCG feels action could be taken on more isolate areas in the lower two miles to move forward.

NCG's conceptual site model for miles 0-2

NCG's conceptual model for miles 0-2 is a depositional system with surface sediment concentrations generally within the range of background. Areas above reference area-based thresholds are addressed

[1]For additional detail of the presentations, refer to the slides found at https://newtowncreekcag.wordpress.com/presentation-slides/.

in the proposed EA. The key contaminants of concern are PCBs, PAHs, and copper. NCG has concluded that the isolated areas of NAPL in miles 0-2 are non-mobile and only in the subsurface, and therefore not a big contributor of contaminants in the lower two miles. NCG also concluded that factors such a point source runoff shoreline erosion/seeps do not pose a significant threat of recontamination.

- What about the influence of CSO discharges?
    - Mr. Schadt: The bigger CSOs are primarily in the upper tributaries, so the smaller ones in this reach do not have a big effect.
- Could the cleanup of the lower end be compromised by the later cleanup effort in the upper miles?
    - Mr. Schadt: The chemistry above mile 2 could result in some smearing into miles 1.7-1.9 , but not into the whole system. The large turning basin structure causes items to drop out before going further. Studies we have done show that 80-90% of solids in the first 1.5 miles are from the East River.
- Is the copper from Phelps or another source? How significant is it?
    - Mr. Schadt: Some data we characterized in 2019 showed that the copper was higher and further down the system than the RI had shown. We wondered if something else could have introduced it or causes a disturbance. The K bridge construction occurred, and we wondered if that could have influenced miles 1.7-2.
- Will the work extend into Dutch Kills or Whale Creek?
    - Mr. Schadt: No. Both have long-term control plan (LTCP) actions in them. Tributaries are their own piece of the puzzle. Just upstream of Whale Creek there is a transportation facility and we did go sample there.
- Do you expect a smearing effect from the tributaries?
    - Mr. Schadt: We don't know if the remediation would be as aggressive in the lower parts of tributaries relative to the turning basin. Maspeth Creek and English Kills would go into Turning Basin. Dutch Kills and Whale Creek are the only ones that would empty into the lower 2. We are not sure it would be that aggressive, but it could. It is something to consider.
- How are costs parsed among potentially responsible parties (PRPs), for example for copper, which may have been unexpected.
    - Mr. Schadt: As a group, the division of costs is not important, though to the individuals it is. Strategies may include trying to understand the ratio of copper to other metals or organics. If it matches the ratio of a site, that can provide a signature to help identify the source.
- Is EPA approval still needed for the EA? How close are you to requesting that?
    - Mr. Schadt: Likely in March. NCG will submit an FFS at the end of the year, which we think will include that there is a viable alternative. EPA will review this and agree or disagree. Importantly, this is an interim remedy and not a final remedy for the area. The area will be deemed final when OU1 is considered. If this EA is pursued, EPA could later require more for the whole area or a subset of miles 0-2.
- When would construction begin? How long would it take?
    - Mr. Schadt: It would begin in 2021. If it were less than 70,000-80,000 yards, it would be finished before the end of the year. If it were larger, it could take two seasons from late summer into winter.
- Would your work impact EPA work upstream?

    - Mr. Schadt: The workload could be a factor. EPA said they would not do this at the expense of OU1. EPA required some work to inform sitewide understanding to move forward with this proposal.
- How would you assess the pros and cons of this approach?
    - Mr. Schadt: Two miles would be taken off the table for the time being. This proposed approach parlays off of the East River influence in terms of speeding up recovery and we hope takes this section to the finish line. For the site as a whole, 2023 is targeted for a ROD. The cleanup will be very costly and it may take a while before cleanup is being done. An advantage would be action in 2021, when it might not otherwise happen until late 2020s at earliest. A disadvantage is that there is no real clean finish line, but there are no other big downsides.
- As cleanup is done in the upper reaches, can you isolate those areas?
    - Mr. Schadt: There will be mitigation requirements, for example for the use of silk curtains, sheet pile walls could be used, and other options to minimize effects, but it is difficult to contain altogether.

FFS process and evaluation

Additional sediment characterization was conducted to refine the remedial footprint. Potential remedial alternatives will be developed that address potential target areas followed by clean cover placement. The evaluation of alternatives will include an assessment of NCG's four key positions on the CSM for CM 0-2:

– East River is dominant source of solids to lower 2 miles
– Net depositional, indications of recovery
– Stable sediment bed
– Ongoing sources will not impact EA remedy

NCG Early Action Project CM 0-2

The EA would include targeted removal of areas in CM 0- 2 with surface sediments with PCB, PAH, or copper concentrations above target Remedial Action
Levels (RALs):

– PCBs: 1.2 – 1.4 ppm
– PAHs: 65 – 85 ppm
– Copper: 400 – 500 ppm

More than 100 samples were collected to help characterize concentration levels. Samples are compared to reference area levels from New York Harbor to determine what needs to be removed. The characterization of the polygons drawn to demarcate the area changed with new sampling that seemed to indicate that the East River continued to have a depositional effect. In miles 1.5-2, there was some increase and some decrease in concentrations, but overall it improved relative to six years ago. We felt this verified the CSM that suggested that the East River's cleaner sediments were responsible for lower concentrations.

- Is the deposition of East River sediment resulting in lower contamination in the entire core of sediment relative to previous sampling?
    - Tom Schadt: No, the contaminated sediment is just deeper.
- So, essentially the deposition from the East River is forming a cap. What about navigation issues if going deeper into the sediment is needed in the future to compensate for the deposition?

    - Tom Schadt: the Creek has authorized depths from the Army Corps of Engineers: 23, 20, and 12 feet. Today the system is mostly near 18-20 feet. Everything has accreted after decades of not dredging, with some sledge barge dredging, for 60 years. Navigation uses have changed, with a mostly tug and barge system. We would like to see clarification of depths in time for the ROD, but if not, it can be accommodated in construction. Based on a study of cores, we could be required to dredge. However, if we dredged some but not all, who would sponsor the additional dredging? If we dredge two to three feet, we would put back at least two feet of clean cover. We would want to maintain the current elevation, and two feet is enough to have tight engineering control. Sometimes EPA requires multiple passes to truly get rid of all contaminated sediment, but usually clean cover addresses some contamination that slips out of the bucket.
- The human health risk assessment (HHRA) and ecological risk assessment (BERA) documented subsurface sediments and the risk they pose. It seems like what you are proposing only deals with the surface.
    - Tom Schadt: the remedial action deals with risk receptor pathways. We acknowledged that there are high concentrations as you go deeper, but there are not many biological organisms deeper. We defined the biologically active zone as six inches.
- Our understanding was that there was severe toxicity throughout multiple feet of sediment. It seems like two feet of cleanup is being proposed. What is EPA's response?
    - *This would just be an interim decision. The full feasibility study (FS) for the entire site will most likely look at both alternatives of limited capping/dredging and a full dredging to clean material, as well as some things in between. The FS will then consider what is appropriate. Because this is an interim remedy, this is one of the risks that the PRPs are taking, that EPA could come back and say that all contaminated sediment needs to be removed from the water body.*
    - Tom Schadt: We might do a light touch in some places but not others. For example, the turning basin has NAPL that will require deeper digging. If we find scouring, we would need to apply an armored cap, so in that case it would require so much depth that we may as well just dig it all out.
- Did you reach uncontaminated soil? At what depth and how much does it vary throughout the system?
    - Tom Schadt: An average of 8 feet, varying between 3.5-12 feet. Some of the shallowest areas are near the mouth of Dutch Kills. Some of the deepest are in the mouth of the basin. In some places in turning basin, even native sediment is contaminated, but in most cases the native sediment is clean.
- What cleanup standards will you use?
    - Tom Schadt: the numbers we act on may not be the same as the final OU1 (full site) decision. We will assume the polygons we cleanup are initially 0 after the EA, then calculate a time 0 average for the whole system, and look for that to be well below the threshold for the system. We will compare the time 0 snapshot to longer-term post-remediation monitoring. This is how we will measure if this is successful. We know if we remediate these areas, they will be well below the average copper risk value, and well below PCB values for reference areas.
- What is the process and timeline for EPA to evaluated those thresholds? Regarding background/reference areas: if the target for cleanup is Westchester Creek, which is next in line to become a Superfund site, why can't we aim higher than the next most polluted site?

    - *Using the remedial action to meet the site-specific goal is typical. One area where we still need a lot of discussion for the site is how to measure success. We're not there yet on that difficult question.*
- How do these reference numbers compare to other sites that are much further along, such as the Hudson or Passaic?
    - Tom Schadt: These are not apples to apples comparisons. Looking at risk assessments, we can determine what an acceptable level in tissues would be of striped bass, crabs, and others that humans consume, and of sediments that organisms are feeding on. To get to acceptable levels, we would have to get at a number below the greater New York Harbor area. We don't think we can reach that. Considering the concentrations in sediment brought in from the East River, we think the numbers would return to those levels pretty soon. The Passaic is mostly driven by dioxins and furans. There is a little bit of those that will be addressed through the PCB cleanup of this site.
    - *The Passaic has 8 ppt, and the cleanup approach there is currently 2 feet of removal bank to bank. The risk-based goal for Gowanus is 28. Here, it is thought that if you remove sediment higher than 65-85, that would result in a lower goal.*
- If those goals can be established for Gowanus, why not here?
    - Tom Schadt: Maybe when we take these elevated areas off the table, we might reach something like that.
    - *65-85 is the remedial action level (RAL). If you remove these hotspots, you would achieve whatever ends up being the preliminary remediation goal (PRG). The PRG is more risk-based and would be modified if necessary by ongoing inputs to the system, and would be much lower than the RAL.*
- Why would the PRPs want to do this, given the risk of needing to go back?
    - Tom Schadt: Some companies live with Superfund sites that go on and on. If a significant portion can reasonably be removed, a benefit would be able to show people that they are trying to do something, get a little good will, and show progress internally to their own organizations. NCG has spent a lot of money doing the remedial investigation, and with their understanding of the CSM, they think they may be able to jumpstart getting the lower 2 miles where they need to be.

Early Action monitoring

In the near term, we would monitor the polygons immediately after remediation is complete, including checking whether cover was put down properly and checking for clean sand and no chemical concentration. We would then look again at a year, 24 months, and 36 months, or periodically. We would look for unexpected changes in concentrations, check whether covers remained in place, etc. we would put sediment traps in different places to test sediment to see if it matches what is seen on the surface. We may monitor near a point source if we felt a problem was developing.

We would then have 2012, 2014, and 2019 baseline snapshots for the system. When we do the bigger OU1 work, we will do a snapshot of the bigger baseline. For those, we will focus on surface-weighted averages – plus some exposure pathways and receptors on a point-by-point basis – and compare to benchmarks for pre- and post-construction. Most of the risks are tissue, so we will get tissue data. We will take cores to demonstrate that the cover is stable.

EA project timing:
– AOC has been executed

– Sediment characterization study during July & August, 2019
– FFS complete and potential Record of Decision by mid-2020 (review of new data and FS evaluations will factor into threshold decision about appropriateness of an interim remedy)
– Any ROD selecting an interim remedy would have to be implemented through a second Order
– Remedy completion, if deemed appropriate via the ROD and subsequent Order, is anticipated to be completed by 2022, possibly by end of 2021

Ongoing studies in CM 2+

We are doing studies to model contaminant fate and transport and bioaccumulation to predict the outcomes of future remedies. We agreed on a treatability study in the East Branch, for which no special order is needed since it is allowed under the current one. This will help us better understand some of the key potential remedy solutions that are most likely to be part of the remedial alternatives. For that study, we will test some approaches, including do some dredging and dewatering of material, capping over soft sediments to test the viability of armored caps. We will also test in situ stabilization, which can be effective in places where the shoreline has bulkheads that are compromised. This slip of the East Branch provided all of these features to test. It may cost $1-1.5M to do these tests in 2020, which will help inform the sitewide feasibility study we are writing.

- The timeline for the EA would be 2021, and you are aiming for a ROD in 2023. What is the benefit of those two years?
    - *You learn by going out on the Creek, and will learn from post-action monitoring. We will learn by seeing if the lower 2 miles are recontaminated. We could get a portion of the Creek done ahead of time.*
    - Tom Schadt: it is possible that the sitewide ROD comes out in 2023, and some groups may not be in a hurry to do it, so it could take more than the additional two years.
    - *If the group wants to go ahead right away, it will take an additional 2-4 years to design, so we would expect the work to begin several years after the ROD is signed.*
- Do the PRPs want this to go forward?
    - Tom Schadt: Yes. They are interested in addressing the contamination there, though not all parties are on the lower 2 miles, and are interested in potentially taking a big piece of the site off the table.
- What about DEP?
    - Tom Schadt: from the monitoring data collected in the remedial investigation, we don't think DEP's plans for ongoing discharges will have a marked effect on the lower 2 miles.
- The CAG is suspicious of the incentives for NCG to do this, though EPA has emphasized that it could require going back for more.
    - Tom Schadt: This system is a tough one, but in the lower 2 miles we see a dramatic difference in context and the opportunity to get this part taken care of.
- Can we see the methodology used to formulate the baseline and remedial goals? Where are the sampling numbers?
    - Tom Schadt: that will be in the FFS.
    - *When we are comfortable with the FFS, we will release it to the public. Often that is close to the time when we release the draft plan. The reference area data are in the RI. We can discuss regarding those data. They were developed based on data and professional judgment.*

CAG review of focused feasibility study report on long-term control plan for combined sewer overflows in the Creek

The CAG discussed EPA's report on the FFS on the LTCP for CSOs and EPA's proposed plan. The CAG discussed a plan for developing comments and engaging other community members in making comments on the plan[2].

The CAG surfaced the following questions and concerns regarding the LTCP FFS Report and Proposed Plan to workshop for comments:

- Why doesn't the 100% CSO control scenario result in at least marginally lower levels of CERCLA contaminants, as compared to the "no further action" LTCP as-planned scenario?
- How would a trackback program to address persistent increases in COPCs from CSO discharges, as identified as a potential option in the report, work? Considering that CS systems are combining so many sources, wouldn't tracking be quite difficult?
- Other additional actions suggested, such as sorbent pads, sediment traps, etc. seem to be focused on addressing contamination that has already happened, rather than prevention.
- The three scenarios are framed as roughly equivalent, but doesn't the data show that the LTCP scenario ("no further action") does reduce contamination relative to the "no action" scenario?
- The number of CSO events per year are a more significant metric for concerning contamination than total volume, since weekly CSOs would convey more contamination to the Creek than periodic very high-volume events.
- The fact that rainfall monitoring is from 2008 is concerning. The plan does not adequately account for climate change projections of increased precipitation.
- Figure 5A on TPCB concentrations seems to show that the 100% CSO control scenario results in higher TBCP levels in the East Branch. Why is this? Does that indicate that the CSO sediment is acting as a cap as a slightly lower level of concentration than the contaminated sediment currently in the Branch?

Additional comments that had been prepared in writing by a CAG member were also discussed:

1. Extension. We need a 30-day extension to fully digest the Proposed OU2 plan and the data that underlies its conclusions, especially given the intervening Thanksgiving and winter holidays.
2. Percent CSO Reduction. Why does the LTCP have a 62.5% reduction figure, but the OU2 plan has only a 61% reduction figure?
3. Sampling.
    a. Are 20 samples from CSO outfalls sufficiently representative of CSO outfalls in all seasons?
        i. Did EPA oversee CSO Outfall sampling? How so?
        ii. Did EPA perform its own CSO sampling or rely on a different CSO Outfall sampling protocol to devise the Gowanus Canal remedy? Why?
    b. Are the samples covering 96% of CSO discharges representative enough of all discharges to model sediment deposition?
    c. Are the 23 treated wastewater discharges sufficiently representative of yearly discharge?

[2] See slides prepared by the CAG providing an overview of the FFS Report and Proposed Plan here https://newtowncreekcag.wordpress.com/presentation-slides/.

4. Lack of Remedial Goal. How can a superfund remedy not have a remedial goal? What is the ecological risk DEP is trying to hit, and, without a goal, how can EPA judge whether this goal is sufficient?
    a. What is the baseline by which DEP will determine this goal?
5. Toxicity & Mobility Characterization. Why doesn't the proposed plan characterize the toxicity and mobility of chemicals of potential concern (COPCs)?
6. Maximum Extent Practicable. Without examining potential further CSO reduction, sediment traps, oil sorbent pads, and in-creek maintenance dredging, how can EPA confirm the remedial actions are protective of human health and the environment, cost effective, and are using permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable? CERCLA Section 121(b)(1).
    a. What is the methodology by which DEP assessed the potential for maximizing actions protective of human health and the environment?
7. 5-Year Review. Why is no 5-year review proposed?
8. Enforceability. How will this superfund remedy be written for enforcement? Surely it cannot be reliant on enforcement of the LTCP. Based on the history of sewage pollution reduction in New York City, the LTCP is more likely to change than not.
9. Backward-looking flow data. How has EPA taken population growth and climate change into account? There are currently rezoning proposals for the Newtown Creek Sewershed, and we expect more especially as the Superfund process moves forward. In addition, the New York City Panel on Climate Change has determined that precipitation is expected to grow by 4-11% by 2050, and more beyond that. DEP's LTCP data is based on a 2008 rainfall, yet while 2008 saw only 46.3 inches, 57.4 inches of precipitation fell at JFK airport in 2018. This can be expected to grow worse.
10. Track-Back Program Uncertain. Why is the "track-back" program deemed "potential"? Is EPA setting forth conditions under which the track back program will be necessary, and is it designing that mechanism now in case it becomes necessary?
11. Skewed Modeling Results. DEP has a track record of skewing modeling results in its favor. For instance, instead of evaluating dissolved oxygen levels throughout a waterway, it uses depth averaging to mask violations and improve its results. In addition, DEP takes samples at certain times of year and times of day to achieve the results that reflect the best water quality. Has EPA evaluated DEP's sampling and modeling methodologies?
12. Baseline Data. The LTCPs rely on baseline data that is not going to be implemented by 2030, such as green infrastructure implementation which is way off track due to a slow start. Is the OU2 baseline based on these types of "future, possible" conditions?
13. Treated Wastewater Discharge. Has EPA considered any alternatives to limit the amount of COPC pollution from treated wastewater discharges?
14. Rikers Island Treatment Plant. Has EPA considered the potential to route some of the Newtown Creek sewage to a new wastewater treatment plant at Rikers Island.
15. Risk to Benthic Habitat. By allowing for no additional remedy, what is EPA saying is an acceptable amount of risk to benthic organisms?

The meeting was adjourned at 8:30 PM.