Technical Review Comments
Newtown Creek Early Action Operable Unit 3
Focused Feasibility Study
Prepared by Anchor QEA, LLC, dated March 2020
January 5, 2021

The U.S. Environmental Protection Agency (EPA) completed its technical review of the Draft Focused Feasibility Study (FFS) Report for the Newtown Creek Operable Unit (OU) 3 Early Action (EA) prepared by Anchor QEA, LLC (Anchor QEA) dated March 2020. EPA's general and specific comments are provided below. General Comments are presented for the overall report and specific comments are organized and presented by FFS report section (Sections 1 through 7 and appendices).

General Comments

1. The four positions regarding the OU3 CSM, which form the basis for conducting an EA for the lower 2-miles of the Creek, need to be further supported. The FFS should also provide additional discussion of the uncertainties surrounding the four positions. In particular, as described further in General Comment #8, the conclusion that there are no identified ongoing sources within the OU3 portion of the Site that need to be addressed for the remedy to be effective should be further supported. Additionally, the FFS should provide a more comprehensive explanation of the rationale, including location-specific reasons, for conducting an EA on the lower two miles of Newtown Creek.

2. The sole RAO proposed in the FFS is as follows:

    - The OU3 RAO is to remediate areas where concentrations of COCs in surface sediment exceed the RALs through sediment removal and backfill to a depth the current CSM indicates is sufficient to avoid current and future exposure to COCs in underlying sediments, in light of current and reasonably anticipated future uses of the creek.

    While this RAO is appropriately limited in scope so that it is theoretically achievable within the scope of an interim early action, it includes both the RALs and the specific remedial approach that should be used, rather than focusing on the more general objectives of the action. As such, EPA recommends revising the RAO to something more consistent with the following:

    - Reduce risks to human health and the environment in a manner consistent with the reasonably anticipated sitewide RAOs by reducing exposure to the highest concentrations of COCs in the OU3 portion of the site.

    This RAO is still appropriately limited in scope for an interim early action but does not rely upon specification of particular details of the remedial alternatives considered (i.e., sediment removal above RALs) in its definition. The alternatives developed in the FFS can be evaluated to determine if they are able to achieve the RAO.

3. As discussed in the AOC, interim performance measures (IPMs) for the EA should be quantitative to assess the progress of the EA. The IPMs included in the draft FFS are essentially study questions. While the questions are helpful in pointing to quantitative values, they are not IPMs. Revise the IPMs to provide quantitative measures of EA progress and success and describe how they will be used to evaluate remedy effectiveness. While there clearly need to be concentration-based IPMs, it would also be beneficial to consider other physical metrics such as cover stability, mixing process, and erosion. Additionally, the IPMs need to include all COCs for the site, not just those with RALs developed for OU3.

4. The FFS states that "Consistent with CERCLA guidance, the long-term measure of success for the OU3 remedial action is that surface sediment COC concentrations ultimately meet the higher of risk-based levels or long-term equilibrium surface sediment COC concentrations that reflect the influence of ongoing external COC sources." However, the FFS appears to put more emphasis on concentrations that reflect external COC sources than on COC trends as a whole. Revise the pertinent text to acknowledge that the long-term measure of success for the OU3 interim remedial action is the achievement of the RAOs identified for the early action, as determined through progress towards meeting IPMs developed for the action, which will eventually be evaluated for consistency with the RAOs and remedial goals identified for the entire study area (OU1). Keep in mind that the OU1 remedy will include and supersede any OU3 decision, and the achievement of any OU3 RAOs would be subsumed by the achievement of OU1 RAOs. As such, the long-term success of an OU3 action would need to continue to be monitored at least until, and likely after, implementation of the OU1 remedy.

   Additionally, this statement does not acknowledge EPA's October 2019 background memorandum regarding expectations of source control. EPA's background memo for OU1 states:

   > "Contaminant contributions from some of these inputs have a reasonable potential to be either fully or partially controlled through either direct CERCLA site decisions and actions, or the actions of other EPA and/or NYSDEC authorities, if necessary. Control of other inputs, like atmospheric deposition, would require regulatory changes well beyond the scope of the Superfund program and this Site. Among the expectations of the OU1 RI/FS will be to sort through the various inputs to Newtown Creek and to identify which need to be addressed by CERCLA, which are covered by other environmental statutes and are anticipated to be addressed through other authority, and which constitute true background conditions for the waterbody. Note that no matter how much these inputs are controlled, some of these inputs will never be completely eliminated (for example, overland flow or atmospheric deposition)."

   The assessment metric should be defined as a downward trend in contaminant concentrations, not achievement of equilibrium. Revise the document to clarify that the assessment metric is a downward trend in concentrations until the OU1 remedy is selected and remedial goals for the entire Study Area (OU1) are defined. IPMs should consider that both internal and external source control will be addressed through OU1, potentially

through direct CERCLA site decisions and actions, or the actions of other EPA and/or NYSDEC authorities.

5. The FFS generally lacks detail necessary to sufficiently evaluate the remedial alternatives for the OU3 EA against the detailed analysis criteria, even taking into account this is an FFS and not a feasibility study (FS). For example, additional site history information regarding industrial activities, vessel activities, discussion of localized areas of erosion or cyclical erosion/deposition, the nature of an area's underlying sediment, episodic and longer-term erosion patterns and depths, tidal/storm/other erosive forces within OU3, the full nature and extent of contamination in the lower two miles of the Creek, including depth profiles of the contamination in sediment and discussion of any temporally spaced chemical concentration data sets used to empirically assess any perceived ongoing natural recovery should be added to help support the evaluation of the remedial alternatives. If the information is not considered warranted for evaluation of the remedial alternatives, then an explanation should be included as to why the information is not appropriate for the evaluation. In addition, the remedial alternative cost estimates do not provide the level of backup information indicated by the U.S. Environmental Protection Agency's (EPA's) *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (2000). This general lack of detail, particularly in the descriptions of the alternatives, allows for subjectivity and uncertainty as to whether the remedial alternatives evaluated achieve the threshold criteria and how they fare with respect to the balancing criteria. More detail and examples are provided in the specific comments.

6. The reference areas that are used to evaluate the proposed alternatives were not all Phase 2 reference areas and were used inappropriately. Phase 2 reference areas were carried through the evaluation process and used in the BERA and RI to indicate a range of conditions present in urban water bodies. The four referenced in the FFS here are mostly Phase 1 reference areas and are all within the industrial/CSO category whose conditions are not only reflective of current activity and inputs but reflect a history of use and disposal practices. The Phase 2 reference areas should be used to generate a range of SWACs for the FFS. Revise the document accordingly.

7. FFS does not appear to acknowledge that erosion occurs within CM 0-2 and that these areas may require additional remedial alternative components, such as armoring of backfill, to achieve the remedial action objective (RAO) and address balancing criteria considerations such as long-term effectiveness and permanence. Final Modeling Results Memorandum Figures G-H-26 through G-H-37 show the presence of net erosional areas based upon 1991 to 2012 differential bathymetry analysis results (e.g., near mouth of Newtown Creek, near Pulaski Bridge, outside the mouth of Whale Creek, between CM 1.5 and CM 2). In addition, portions of CM 0-2 may be prone to episodic erosion and deposition (e.g., prop scour and redeposition). Revise the text to include armoring or other equivalent remedial component to address erosion in such areas. In addition, Appendix D: Performance Monitoring Plan should discuss performance monitoring (including bathymetric analyses) that would be conducted as part of implementing the remedial alternatives to address erosion concerns. EPA notes that it will provide detailed comments on the Performance Monitoring Plan when the detailed plan is provided by the Newtown Creek Group (NCG).

8. FFS prematurely concludes that "ongoing sources of contaminants of concern (COCs) are not expected to negatively impact EA success." Uncertainties associated with the contaminant contributions of some ongoing sources still exist. Revise the text to note that some contaminant loading uncertainties exist, and that they will be evaluated through the OU1 RI/FS process (e.g., bounding analyses to estimate potential lateral groundwater contaminant loads using the chemical fate and transport model). EPA also recommends that a spatially and temporally dense long-term monitoring program be implemented to assess the impacts of all ongoing sources (i.e., recontamination) on any OU3 remedy. In addition, if the OU3 EA moves forward, a decision-making framework and contingent actions will need to be developed, likely as part of OU1, to address sources and remediate sediments if recontamination or uncontrolled sources are identified. The decision framework should be positioned to ensure the durability and effectiveness of the remedy in reducing risk and accelerating natural recovery.

9. PRGs for the Study Area will be determined as part of the OU1 RI/FS process, and remediation goals for the entire Study Area will be selected in a Record of Decision for OU1. This OU3 FFS is evaluating an interim early action for a portion of the OU1 Study Area. It is important to note that RALs are not the same as PRGs. Ultimately, any action taken as part of OU3 will need to meet the Remediation Goals selected in the OU1 ROD. Until such as time as the OU1 ROD is signed, IPMs would be used to assess whether an OU3 interim early action is consistent with achievement of the OU1 goals, or whether additional cleanup activities related to the OU3 portion of the Study Area are needed.

10. Monitored natural recovery (MNR) is incorporated into each alternative for areas outside of target areas. The most direct measure of MNR is empirical data collected at the same locations over multiple time steps. Revise the document to discuss any such existing data sets and the associated recovery rates and processes. In the absence of such data, the text should note that a direct assessment of MNR rates will not be available until a comprehensive long-term monitoring program is undertaken. As such, consideration of MNR as a component of the early action for OU3 is not appropriate at this stage. Instead, the early action should focus on the target areas, as defined by the FFS, to be addressed and the document should be revised to note what uncertainties will continue to be evaluated through the OU3 Performance Monitoring Plan (PMP) and the OU1 RI/FS process. Although not all instances of MNR are commented on in the specific comments, in general, MNR should be removed from the FFS as a viable component of the remedial alternatives being evaluated.

11. Enhanced natural recovery (ENR) is presented/discussed in the FFS as MNR or as an in-situ containment technology. MNR, backfilling, and in situ containment have different objectives, which means that ENR should be presented/discussed as its own separate general response action (GRA)/process option/technology in the FFS. Note that ENR is generally used in areas where natural recovery has been demonstrated and is used to enhance MNR. Since, as noted above, consideration of MNR as a component of the early action for OU3 is not appropriate at this stage, a consideration of ENR is similarly not appropriate at this stage and the early action should focus on the target areas to be addressed.

12. Throughout the text, "OU3" is used interchangeably to indicate the potential EA to be performed in CM 0-2 and to indicate the physical area of CM 0-2. For example, the third bullet on Page 1 defines OU3 as an evaluation of a potential interim EA for the lower portion of Newtown Creek from CM 0-2. However, the first sentence in the following paragraph states that the FFS relates specifically to the evaluation of a potential EA in OU3. Revise the text to clearly indicate the definition of OU3 as the physical area of CM 0-2, excluding tributaries (e.g., Dutch Kills and Whale Creek), and revise instances of its use elsewhere in the document to reflect this definition.

13. The OU3 CSM description included in Section 2 of the FFS indicates that toxicity to benthic macroinvertebrates in the Study Area is generally similar to the four Phase 2 reference areas. Revise this statement to convey that toxicity results indicated are significantly more toxic in the Study Area than the reference areas. The CSM description should be revised as needed to reflect the higher level of toxicity in the Study Area relative to the Phase 2 reference areas.

14. General discussion of applicable or relevant and appropriate requirements (ARARs), the identification of ARARs, and the evaluation of compliance with ARARs is not consistent with EPA's *CERCLA Compliance with Other Laws Manual* (1988) and other pertinent ARAR guidance. An example is the statement in Section 3.5 of "ARARs are promulgated standards, requirements, criteria, or limitations under federal environmental laws that apply directly to a CERCLA remedial action and are considered relevant and appropriate." ARARs are either applicable or relevant and appropriate, not both, as implied by this sentence, which has conflated the two determinations. Another example is the determination that Federal Clean Air Act National Ambient Air Quality Standards (NAAQS) are to be considered (TBC) information, even though they are promulgated. This also implies the stringency test was not applied between federal and state potential ARARs. Significant revisions pertaining to ARARs in this FFS are needed for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant EPA ARAR guidance. Revise the document accordingly.

15. The FFS provides identification of a preferred alternative (Alternative 3) and a discussion of remedy selection criteria (e.g., cost-effectiveness) supporting the NCG's preferred alternative over other remedial alternatives. The identification of a preferred remedial alternative and discussion of CERCLA remedy selection criteria to justify this identification in an FS is not supported by the NCP and related EPA remedial investigation (RI)/FS guidance. Revise the text to remove the discussion related to remedy selection criteria and the identification of a preferred alternative from the Executive Summary and Section 7.8 of the FFS. The NCG may provide their rationale for support of an EPA-identified preferred alternative or other alternative during the public comment period after the proposed plan is released for the OU3 EA.

16. The FFS notes that location-specific conditions (e.g., bulkheads and/or other shoreline obstructions such as docks) may limit or prohibit dredging and backfill and that localized refinements, such as offsets to the selected alternative, will be developed to accommodate these features while maintaining the original intent of the alternative. The FFS should not assume that bulkheads and other shoreline obstructions will require implementation of an

offset and preclude dredging and backfilling when a target area intersects a structure. Rather, removal and replacement of a structure could be incorporated into the implementation of the dredging and backfill components of an alternative. Revise the document accordingly.

17. Please assure that the revised FFS remains a stand-alone document.

Specific Comments

Executive Summary

1. Update the Executive Summary to reflect the direction indicated in the General Comments and related Specific Comments pertaining to the individual FFS sections.
2. Page ES-1, first paragraph: Clarify that the Study Area discussed throughout the document is in reference to OU1.

Section 1

3. Page 1, first paragraph: Revise the second to last sentence in paragraph one as follows:
    a. EPA has approved the *Baseline Human Health Risk Assessment* (BHHRA; Anchor QEA 2017a) and the *Baseline Ecological Risk Assessment* (BERA; Anchor QEA 2018a) and ~~is currently review the draft~~ the second draft of the *Remedial Investigation Report* (RI Report; Anchor QEA 2019a) is currently being revised by the NCG based on additional EPA comments.
4. Page 1, second paragraph: Revise the second paragraph as follows:
    a. ~~In recognition of that possibility and in light of requests from NYCDEP to take expedited action on certain of its ongoing discharges into the Site,~~ EPA designated the following three operable units (OUs), as shown in Figure 1-1, for the Site:
5. Page 2, Section 1.1
    a. Second sentence: While it is understood that Section 1.1 intended to provide a brief summary of the site history, the description of industrial activities along the banks of the creek is limited compared to the description in the revised OU1 draft RI report (Anchor QEA 2019). Expand the description of industrial activities to be more consistent with the description provided in the revised draft OU1 RI report. Also, cite the reference or references from which the information was derived, wherever appropriate.
    b. Last sentence: Provide a reference to support the last sentence regarding designation of the Newtown Creek area as a significant maritime and industrial area. The revised draft RI report references "NYC, 2011. Vision 2020: New York City Comprehensive Waterfront Plan Appendix B. New York City Department of City Planning. March 2011."
6. Page 3, Section 1.2, second paragraph, first sentence: Add a sentence to this paragraph noting that no major source control actions at the site have yet been implemented under

CERCLA and there is still significant uncertainty associated with the impact of ongoing sources on an EA remedy.

7. Page 3, Section 1.2, second sentence: delete this sentence (included below for clarity):

    a. ~~Although most of the OU3 surface sediments are characterized by contaminant concentrations that are at (or below) regional reference concentrations, isolated areas of OU3 have surface sediment contaminant concentrations that exceed the upper ranges of concentrations measured in surface sediments from regional reference areas.~~

8. Page 3, Section 1.2, second paragraph, last sentence: This sentence is stated with a level of certainty that is not reflective of the uncertainties in the OU3 CSM. To reflect the uncertainties, revise the beginning of the sentence to, "This document aims to support the contention that conducting an EA would accelerate…" and define long-term equilibrium to mean a trend toward decreasing COC concentrations until the OU1 remedy is selected and remedial goals for the entire Study Area (OU1) are defined. Add a cross reference to the data and the Section 2 CSM description that is being used to support the referenced sentence.

9. Page 3, Section 1.3, first paragraph: Revise the first two sentences of the first paragraph as follows:

    a. FFS database of laboratory analytical results and physical properties for OU3 includes ~~OU1 RI/FS data (see the draft RI Report [Anchor QEA 2019a])~~<u>the data collected as part of the OU1 RI, which will be included in its entirety in the OU1 RI Report that is currently under revision,</u> along with data collected in 2019 as part of the EPA-approved Sediment Characterization Study (SCS) conducted for OU3 (Anchor QEA 2019b). <u>Data relevant to the OU3 FFS from the OU1 RI is included in this FFS report.</u>

10. Page 3, Section 1.3, first paragraph: Provide a table summarizing the data collected as part of the Sediment Characterization Study (SCS) field program or reference the final SCS data summary report in the revised FFS. Also, revise the text in Section 2, where appropriate, to discuss any temporally spaced chemical concentration data sets (if available) used to assess any perceived ongoing natural recovery. Reoccupation of sample locations over time is the most direct means of assessing natural recovery.

11. Page 3, Section 1.3, first paragraph: Revise the text to include the preliminary RALs that were used in planning the sediment characterization study.

12. Page 3, Section 1.3, second paragraph: In the final FFS report, reference the data usability assessment included in the SCS data summary report. While the SCS data summary report is currently under review by EPA, it will be final before the revised FFS is submitted.

13. Page 4, Section 1.4, Section 2: No CSM figure is included in the document. Add a CSM figure to Section 2 of the document.

14. Page 4, Section 1.4, Section 3, first sentence: Revise the first sentence as follows:

a. Consistent with the SOW (USEPA 2019), Section 3 summarizes the COCs presenting unacceptable risk in OU3, based on the OU1 human health and ecological risk assessments, and the remedial action objectives (RAOs) against which the remedial alternatives will be evaluated.

15. Page 4, Section 1.4, Section 4 description, first sentence: The first sentence indicates that Section 4 identifies and screens GRAs and classes of remedial technologies for technical implementability based on site-specific factors. Section 4 does not appear to include an initial screening for technical implementability prior to screening GRAs, technologies, and process options based on effectiveness, implementability, and cost. The Administrative Settlement Agreement and Order on Consent (AOC) specifies that GRAs for CM 0-2 will be identified consistent with EPA's general RI/FS guidance (1988). The EPA RI/FS guidance states that, in some situations, the number of viable or appropriate alternatives for addressing site problems may be limited; thus, the screening effort may be minimized or eliminated if unnecessary. Because this is an FFS and the AOC anticipated that GRAs evaluated in the FFS would be limited to various depths of sediment removal and backfill/cover coupled with monitoring, a formal two-step technology screening is not needed for the FFS. Instead, the screening description here and in Section 4.2 can simply describe the guidance used to identify and assemble the technologies used to develop the remedial alternatives. Revise the document accordingly.

16. Page 5, Section 1.4, Section 6 description: Revise the first sentence to indicate that EPA guidance also includes *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (2000). After the second sentence, add a sentence indicating that the section does not include evaluation of the two modifying criteria, which will be assessed following public comment on the FFS report and proposed plan in accordance with EPA guidance (1988).

17. Page 5, Section 1.4, Section 7 description: Revise the second sentence to indicate that the advantages/disadvantages are in relation to the threshold and balancing criteria described for Section 6.

18. Page 5, Section 1.4, Appendices: Indicate in parentheses following the performance monitoring plan that this appendix is submitted under a separate cover if that will be the case for subsequent iterations of the FFS.

Section 2

19. Page 6, Section 2, third paragraph, last sentence: Revise the last sentence as follows:

    a. The OU3 CSM, as well as the OU1 CSM, will be updated as new information becomes available and will be validated as part of a comprehensive PMP, should an EA move forward to completion.

20. Page 6, Section 2, last paragraph, first sentence: Revise the first sentence as follows:

    a. This section focuses on elements of the CSM, as it is currently understood, specific to OU3 and the five COCs identified in the RI Report that are also the focus of the OU3 FFS (see Table 2-1).

21. Page 6, Section 2, last paragraph: Revise the text to indicate that the FFS focuses on a subset of the COCs and explain why.

22. Page 7, Section 2, first bullet, last sentence: Revise the last sentence as follows:

    a. Concentrations in CM 1–2 are higher than those in CM 0–1, but they are also ~~generally consistent with reference area concentrations, as well as~~ closer to concentrations in the East River and are ~~being~~ primarily influenced by solids from the East River.

23. Page 7, Section 2, third and fourth bullets, and Page 7, Section 2.1.3, first paragraph: Per General Comment 7, these sections should acknowledge that net erosion and cyclical erosion/deposition (e.g., prop scour and redeposition) does occur within CM 0-2 and as a whole, OU3 is erosional in some areas.

24. Page 7, footnote 6, first sentence: Revise the first sentence as follows:

    a. The reference areas used for this evaluation are waterbodies that are physically, biologically, chemically, and geologically similar to OU3, except for the releases of the hazardous substances that will likely require remedial actions as per the Superfund site.

25. Page 8, Section 1, first full bullet: Revise the first full bullet as follows:

    a. With the exception of two locations, nonaqueous phase liquid (NAPL) was not observed in OU3 surface sediment during the OU1 RI process, and, where present in the subsurface sediment, the data indicates that NAPL was in a residual state and distributed intermittently. At CM 1.7, thin discontinuous lenses of NAPL were ~~reported~~ observed in the subsurface sediment in three cores. These three cores were collocated with (and surrounded by) cores that did not contain visual observations of NAPL coated, NAPL saturated, or shake test layer results. Preliminary indications are that NAPL mobility testing conducted throughout CM 0–2 (including CM 1.7) ~~during~~ as part of the FS Part 1 field program ~~demonstrated~~ indicates that NAPL in CM 0–2 is immobile.

26. Page 8, Section 2, third full bullet, first sentence: Revise the first sentence as follows:

    a. The OU1 BHHRA found that risks to human health are driven by consumption of fish and crab by recreational anglers and crabbers.

27. Page 8, Section 2, third full bullet, second sentence states "Measured tissue concentrations in fish and crab, and the associated risk, are generally lower in CM 0-2, compared to CM 2+ and the tributaries." Revise the second sentence in the bullet to read "Measured tissue concentrations of PCBs in fish and crab, and the associated risk in CM 0-2 are generally similar to the rest of the Study Area." Tissue concentrations of polychlorinated biphenyls (PCBs) (the primary human health risk assessment [HHRA] risk driver) in Fish Zones 1 and 3, which correspond to CM 0-2, are very similar to and sometimes higher than in CM 2+ and the tributaries.

28. Page 8, Section 2, fourth full bullet says, "Toxicity to benthic macroinvertebrates,…are generally similar to the four Phase 2 reference areas…" Delete this bullet. 22 of the 24 Reference Area locations showed greater than (>) 80-percent survival, one showed 73-percent survival, and one showed 30-percent survival. Additionally, 35 Study Area locations showed 7 locations with >80-percent survival, 11 locations with 20- to 80-percent survival, and 17 locations with less than (<) 20-percent survival. The Study Area was significantly more toxic than the Reference Areas.

29. Page 9, Section 2.1, first paragraph, second to last sentence: Revise as follows:

    a. Positions represent long-term conditions in the OU3 CSM, and the post-remedy monitoring program is intended to demonstrate the validity of the four Positions, and thus the validity of the overall OU3 CSM.

30. Page 9, Section 2.1.1, first paragraph, first sentence: Revise as follows:

    a. Position 1, as stated in the SOW of the AOC governing this FFS, is as follows: Tidal flow from the East River is currently the dominant source of solids to the surface water and sediment bed in OU3.

31. Page 9, Section 2.1.1.1, first paragraph, first sentence: Revise as follows:

    a. The extensive hydrodynamic-focused datasets collected during Phase 1 and Phase 2 of the OU1 RI…

32. Page 9, Section 2.1.1.1, first paragraph, last sentence: Revise as follows:

    a. The results of the hydrodynamic modeling study are currently under review by USEPA as part of its review of the draft 2019 RI Report and are considered to be accurate by the NCG.

33. Page 10, Section 2.1.1.2, first paragraph: According to Figures 2-11 and 2-12, the vast majority of sediment in the CM 0-1 originates from the East River. Also, Figure 2-12 includes point sources, not just CSO and storm water discharges. Revise the text in this paragraph for clarity. Additionally, consider reversing the first and second sentences and add "Based on data and modeling" before "…sediments originate…".

34. Page 10, Section 2.1.1.2, second paragraph: Revise the text to acknowledge that median total PCB concentrations in surface water during dry weather are higher at CM 0-2 compared to East River and reference area concentrations. Currently, the text implies that all COCs have surface water concentrations similar to the East River and reference areas.

35. Page 11, Section 2.1.1.2, first paragraph, last sentence. Add reference for the information presented in Figure 2-13.

36. Page 11, Section 2.1.2, first paragraph: Revise as follows:

    a. Position 2, as stated in the SOW of the AOC governing this FFS, is as follows: OU3 is net depositional and natural recovery toward long-term equilibrium conditions is expected to continue over time via deposition of solids primarily from the East River.

37. Page 11, Section 2.1.2, first paragraph: Per General Comment 4, long-term equilibrium should be described as decreasing COC trends until the OU1 remedy is selected and remedial goals for the entire Study Area (OU1) are selected.

38. Page 11, Section 2.1.2, second bullet first sentence: Revise the first sentence as follows:

    a. The depositing sediments COC concentrations are lower ~~are cleaner~~ than existing creek sediments because the primary source is the East River.

39. Page 11, Section 2.1.2.1: Revise this section to include a discussion of localized areas of erosion and cyclical erosion/deposition within OU3. Additionally, specify the time steps evaluated for the differential bathymetry analysis and include figures showing the differential bathymetry analysis for all time steps evaluated in the development of site net sedimentation rates.

40. Page 11, Section 2.1.2.1: Apart from the discussion of TPAHs, locally high surface sediment concentrations of other COCs, as evidenced by SCS data, are not discussed in the text. For example, SCS data for PCBs also show elevated concentration near CM1.0. In addition to the general trend discussion, revise the text to also discuss locally high concentrations of COCs for both SCS and RI data.

41. Page 13, Section 2.1.2.2: Revise this section to discuss sediment trap data quantitatively. Instead of generalizing the core sampling results for all COCs, vertical trends in concentrations should be discussed in greater detail for each COC individually. For example, for the total polycyclic aromatic hydrocarbon (TPAH) results, three of the seven cores had relatively high surface sediment concentrations. Potential reasons for variations in trends between the different COCs should also be discussed for the core data. Revise the document accordingly.

42. Page 13, Section 2.1.2.2, fourth paragraph: Revise the text to clarify if the amount of available dioxin/furan data provides a statistically robust data set that is sufficient for this analysis presented on cross plots of surface sediment COC concentrations.

43. Pages 13 and 14, Section 2.1.2.2, fourth paragraph, fourth sentence: Revise follows:

    a. The observation that surface sediment COC concentrations are generally lower than subsurface sediment COC concentrations is ~~confirmed~~ supported by a significance level…

44. Page 14, Section 2.1.3, first paragraph, first sentence: Revise as follows:

    a. Position 3, as stated in the SOW of the AOC governing this FFS, is as follows:…

45. Page 14, Section 2.1.3.1, first paragraph, first sentence: Revise as follows:

    a. Spatial distribution of maximum bed shear stress was predicted by the hydrodynamic model developed for OU1 during a typical monthly period with neap-spring tidal cycles and point-source discharge events.

46. Page 14, Section 2.1.3.1, first paragraph, third sentence: Revise as follows:

a. A Sedflume study conducted on five sediment cores collected in the Study Area as part of the OU1 RI measured critical shear stresses in various sediment layers that range from an average of 0.36 pascal in the surface layer to greater than 1.0 pascal in deeper layers (see Table 2-2).

47. Page 14, Section 2.1.3.1, first paragraph, third sentence: Define critical shear stresses.

48. Page 14, Section 2.1.3.1, first paragraph: EPA does not agree that these are isolated areas of high shear stress and erosion. As seen in Figure 2-29, these areas constitute a large portion of OU3. Include a figure showing the location of the five sedflume cores for completeness and revise the text to discuss potential spatial variations in the critical shear stress results.

49. Page 14, Section 2.1.3.1, second paragraph: Revise the text to discuss how the contribution of erosion caused by prop wash compares to other mechanisms causing erosion, including river current under a 100-year flood event, waves, and vessel-generated wakes.

50. Page 15, Section 2.1.3.1, first (incomplete) paragraph, second (full) sentence: Revise the second (full) sentence as follows:

    a. Data from sediment traps deployed in the Study Area as part of the OU1 RI indicate depositing material sampled in the sediment traps…

51. Page 15, Section 2.1.3.1, first (incomplete) paragraph, last sentence: Revise the last sentence as follows:

    a. This similarity may be driven by the following two factors: 1) chemical concentrations in surface sediments are similar to concentrations measured in East River ~~reference areas~~…

52. Page 15, Section 2.1.3.1: Provide a citation for the prop wash modeling results discussed in this section.

53. Page 15, Section 2.1.3.2, second sentence: Revise as follows and discuss the impact of prop wash on shear stresses and the conclusion of net deposition:

    a. The low shear stresses described above predicted by the hydrodynamic model…

54. Page 15, Section 2.1.3.2: The bathymetric change from 2011 to 2012 shown in Figure 2-36 shows areas of net erosion. Discuss this figure in greater detail and comment on how it specifically supports the conclusion that the Study Area is net depositional.

55. Page 15, Section 2.1.3.3: To better evaluate the conclusion that the sediment bed is stable, expand the discussion to comment on the age of the sediment at different depths. The geochronology data can be used to support this discussion.

56. Page 16, Section 2.1.4, first paragraph: Revise as follows:

    a. Position 4, consistent with the SOW of the AOC governing this FFS, is as follows: Ongoing external inputs of the COCs and the in-creek processes that influence the fate and transport of COCs are not expected to negatively impact EA remedy success.

These ~~potential sources~~ external inputs and in-creek processes include the following:…

57. Page 16, Section 2.1.4, second bullet: Revise as follows:

    a. In-Creek Processes: NAPL migration ~~(not observed in OU3)~~…

58. Page 16, Section 2.1.4: Uncertainties associated with the contaminant contributions of some ongoing sources still exist. Revise the text to note that contaminant loading uncertainties exist, and that some will be evaluated through the OU1 RI/FS process. EPA also recommends that a spatially and temporally dense long-term monitoring program be implemented to assess the impacts of all ongoing sources (i.e., recontamination) on any OU3 remedy. Revise the text accordingly and discuss the role of performance monitoring in verifying this position. See General Comment 8.

59. Page 16, Section 2.1.4, last paragraph, second to last and last sentences: Revise the end of the last paragraph in this section as follows:

    a. As discussed in Section 2.1.4.1, it is the NCG's position that none of these potential external inputs will negatively affect EA remedy performance, either because they are negligible, or because they represent a current input that will influence long-term equilibrium conditions. In addition, as discussed in Section 2.1.4.2, it is the NCG's position that ~~the assessment of~~ the various in-creek processes that influence COC fate and transport discussed ~~in Section 2.1.4.2 were determined to be~~ are negligible within OU3.

       Note that, if the early interim action for OU3 is conducted, this aspect of the CSM, in particular, will be evaluated as part of the PMP described in Appendix D.

60. Page 16, Section 2.1.4.1.1, last paragraph: Revise the last paragraph as follows:

    a. Because the lower two miles of Newtown Creek are on average…

61. Page 17, Section 2.1.4.1.1.1, first sentence: Revise the first sentence as follows:

    a. The concentrations of COCs sorbed on solids entering OU3 from the East River are in the range of surface sediment COC concentrations ~~in the reference areas~~ and also in the range of surface sediment COC concentrations in the downstream portions of OU3.

62. Page 17, Section 2.1.4.1.1.1: Clarify how natural recovery is expected to continue (as stated in Section 2.1.4.1) when the incoming East River concentrations are in the same range of surface sediment concentrations within OU3. Discuss if East River concentrations are expected to decline over time. Also provide a source for the evaluation that determined that the volumetric flow is 250 times greater than point-source discharges.

63. Page 17, Section 2.1.4.1.2, first paragraph, third and fourth sentences: It is unclear how these statements support the argument. According to these statements, one-third of the outfalls are in CM0-2. Is this portion of the Creek more than one-third of the overall system?

And if those discharges outside of OU3 are impacting OU3, then do they need to be controlled? Revise this section to further explain why these inputs are not an issue.

64. Page 17, Section 2.1.4.1.2, fourth paragraph, first sentence: Move this statement to before the first paragraph in Section 2.1.4.1.2 and revise as follows:

    a. ~~The~~ It is the NCG's position that the overwhelmingly large influence of the East River dampens the influence of the ongoing point-source inputs in OU3, ~~which generally lie within the range of reference area surface sediment data, although at the upper range of those data (see Figures 2-37 through 2-41)~~ as supported by the following discussion.

65. Page 17, footnote number 9

    a. Edit the beginning of the sentence as follows: ~~As discussed in Section 4.1.3.5 of the RI Report (Anchor QEA 2019a),~~ For the OU1 RI,

66. Pages 17 and 18, Section 2.1.4.1.2, fourth paragraph: Delete the fourth paragraph in Section 2.1.4.1.2 (after moving the revised first sentence as annotated in the previous comment).

67. Page 18, Section 2.1.4.1.2.1: Add the following sentence to the end of this section:

    a. If an interim early action is taken, the accuracy of this conclusion will be evaluated as part of the PMP.

68. Page 18, Section 2.1.4.1.3, third paragraph, second sentence: Revise the second sentence as follows and provide support for the 18% value, or delete the statement:

    a. Based on current modeling, the lateral discharge accounts for approximately 18% of the total groundwater discharge to OU3.

69. Page 19, Section 2.1.4.1.3, first bullet point: The text states that "…it is likely that sorption equilibrium is attained." Clarify if this was evaluated using empirical data. If not, the NCG cannot be certain that this will be the case for all COCs. Also, discuss if this is expected to be true of lead and copper, which do not sorb as strongly to sediment compared to organic contaminants.

70. Page 19, Section 2.1.4.1.3, third bullet point: The text indicates that dissolved COC concentrations just below the surface sediment are lower than underlying groundwater. Note that this could also be, at least in part, tidal pumping impacting the time-averaged pore water concentration measurements.

71. Page 19, Section 2.1.4.1.3, last bullet point: Include a citation indicating source of information in this bullet point.

72. Page 19, Section 2.1.4.1.3.1, first sentence: Revise as follows:

    a. Discharge of groundwater containing COCs to the Study Area is not expected to adversely affect EA remedy success. This conclusion is supported by the following analyses from the OU1 RI:…

73. Page 19, Section 2.1.4.1.3.1, first sentence: EPA believes that the data presented in this section does not adequately support this statement. Almost 75 percent of OU3 is subject to positive groundwater seepage, and uncertainties associated with the contaminant contributions of some ongoing sources still exist. Revise the text to note that some contaminant loading uncertainties exist, and that they will be evaluated through the OU3 PMP and will continue to be evaluated through the OU1 RI/FS process (i.e., recontamination) on any OU3 remedy.

74. Page 19, Section 2.1.4.1.3.1: Add the following sentence to the end of this section:

    a. <u>If an interim early action is taken, the accuracy of this conclusion will be evaluated as part of the PMP.</u>

75. Page 20, Section 2.1.4.1.5: Information presented in this section is incomplete, as it does not address the potential impacts of NAPL seeps on EA remedy success. As requested by EPA comment Nos. 6 and 29 on the revised draft RI report, for completeness provide a summary of NAPL seeps observed by others in CM 0-2 of Newtown Creek and the potential of those seeps to impact the success of the EA in OU3. Also, include a brief discussion of sheen and bleb distribution in sediment in CM 0-2 consistent with the discussion in the RI Report and address potential impact of sheens and blebs in sediment on remedy success.

76. Page 21, Section 2.1.4.1.5.1: Add the following sentence to the end of this section:

    a. <u>If an early interim action is taken, the presence of seeps will continue to be monitored as part of the performance monitoring plan and, if necessary, additional mitigative action will be recommended for action by the appropriate entity (e.g., city, state, federal, and/or private).</u>

77. Page 21, Section 2.1.4.1.6, second paragraph: The text states that, "With a few exceptions, the concentrations of COCs from surface sediment samples in or near potentially erodible shorelines in OU3 are within the range of, or lower than, the rest of the RI surface sediments collected in the same general area (see Figures 2-51 through 2-55)." Discuss these exceptions (e.g., PCB concentrations) in or near potentially erodible shorelines in greater detail. Additionally, areas where COCs in surface sediment in or near areas of potentially eroding shoreline are elevated above RALs need to be identified and discussed in this section.

78. Page 21, Section 2.1.4.1.6.1: Revise this section as follows:

    a. Given the low percentage of shoreline in OU3 that is potentially erodible and a review of the sediment data adjacent to those shoreline areas, shoreline erosion <u>does</u> ~~is~~ not <u>appear to be</u> a significant ongoing external input of COCs to OU3 and is not expected to impact EA remedy success. However, in instances where COCs in surface sediment in or near areas of potentially eroding shoreline are elevated above RALs (see Section 3.2), these areas would be included in remedial alternatives evaluated in this FFS<u>, and appropriate shoreline protection actions would be taken. In addition, as with seeps, the presence of erodible shorelines will continue to be monitored</u>.

79. Page 22, Section 2.1.4.1.7, first paragraph, last sentence: Revise the last sentence in the first paragraph as follows:

    a. Several ~~DAR~~ actively used upland properties ~~sites~~ in OU3 are identified as having current overwater activities in one of these two categories.

80. Page 22, Section 2.1.4.1.7.1: Provide justification to support the conclusion that "Future overwater activities are not expected to impact success of the EA remedy." Monitoring future releases from overwater activities should be part of the performance monitoring plan.

81. Page 22, Section 2.1.4.1.7.1: Add the following sentence to the end of this section:

    a. Again, this would be confirmed through implementation of the PMP if an early interim action is taken.

82. Page 22, Section 2.1.4.2.1: Add the following statements to the end of this section:

    a. Data used as part of this analysis are under review as part of the OU1 RI. The NCG's draft, still subject to review, interpretation of the results is provided below. If these conclusions are contradicted once the review is complete, and an interim early action is selected, then additional appropriate actions will be taken based on the pre-design investigation that would be conducted, and the PMP will evaluate the issue further.

83. Pages 22 and 23, Section 2.1.4.2.1.1, second sentence (split between Pages 22 and 23): Revise this sentence as follows:

    a. The datasets included more than 400 surface sediment grabs and more than 70 subsurface cores collected from the OU3 portion of the site during the OU1 RI, Part 1 of the OU1 FS field investigation, and the OU3 SCS investigation.

84. Page 23, Section 2.1.4.2.1.1, Surface Sediment: For consistency with the figure, include the number of samples with blebs because Figure 2-56 shows multiple samples with blebs.

85. Page 24, Section 2.1.4.2.1.1, Subsurface Sediment: Revise this text to acknowledge that the three cores at CM 1.65 were also co-located with and surrounded by blebs based on visual observations and shake test results.

86. Page 24, Section 2.1.4.2.1.1, Subsurface Sediment, CM 1-2 bullet point, last sentence: Revise the last sentence under the CM 1-2 bullet point as follows:

    a. Note that as Part 1 of the OU1 FS field investigation, NAPL mobility testing was performed on sediment samples from OU3, as described in Section 2.1.4.2.1.2.

87. Page 24, Section 2.1.4.2.1.2, first sentence: Revise as follows:

    a. Part 1 of the OU1 FS field investigation included NAPL mobility testing of 24 sediment samples and 4 native material samples from unfrozen cores collected from 11 stations located in OU3 (see Figure 2-59).

88. Page 24, Section 2.1.4.2.1.2: The text states that "This produces a driving force equal to a hydraulic gradient of 25, which is more than 100 times larger than the maximum upward hydraulic gradient measured anywhere in the Study Area." This statement was taken from the OU1 RI report. Clarify if it is still accurate for OU3 exclusively.

89. Page 25, Section 2.1.4.2.1.3: The text states that "These results indicate that NAPL in the subsurface sediment and native material is not mobile, is not expected to migrate to the surface sediment layer, and does not pose a risk, because exposure pathways are incomplete." The NAPL mobility results were designed to evaluate NAPL mobility caused by advection of the pure phase NAPL. Mobility caused by other mechanisms, such as ebullition and dissolution with subsequent dissolved-phase advection, is still a possibility that is not addressed in this section. Therefore, EPA disagrees that the presence of NAPL is not expected to impact EA remedy success solely based on NAPL mobility results. Discuss other mechanisms facilitating NAPL migration and how NAPL can serve as a long-term dissolved-phase source. Also, include a brief discussion of sheen and bleb distribution in sediment in CM 0-2 consistent with the discussion in the RI Report and address potential impact of sheens and blebs in sediment on remedy success.

90. Page 25, Section 2.1.4.2.1.3: Add the following sentence to the end of this section:

    a. <u>If an interim early action is taken, this conclusion will be evaluated as part of the PMP.</u>

91. Page 26, Section 2.1.4.2.2.1: Add the following sentence to the end of this section:

    a. <u>If an interim early action is taken, this conclusion will be evaluated as part of the PMP.</u>

92. Page 26, Section 2.1.4.2.3: Include text to clarify why erosion caused by river currents, waves, and wakes is not expected to have a substantial impact relative to prop wash. Additionally, the text indicates that the prop wash model predicts that resuspended sediments are subsequently redeposited within a localized area. Quantitatively identify the extents of what is considered a localized area in this context.

Section 3

93. Page 27, Section 2.1.4.2.3.1: Add the following sentence to the end of this section:

    a. <u>If an interim early action is taken, this conclusion will be evaluated as part of the PMP.</u>

94. Page 28, Section 3.1 and/or page 29, Section 3.2: Indicate why Newtown Creek's NAPL sources and COPC hotspots recommended for early action by CSTAG in 2015 were not selected.

95. Page 28, Section 3.1, first paragraph: after the first sentence, add the following sentence: These risks were driven by TPAH, TPCB, copper, D/Fs, and lead, with some minor risk contribution by other contaminants.

96. Page 28, Section 3.1, second paragraph, first sentence: Revise as follows:

a. The following summary of the risks associated with the five COCs applies to the full OU1 Study Area.

97. Page 28, Section 3.1, first bullet, first sentence: Revise as follows:

    a. Risks to human health were within or below acceptable EPA values ~~There are no risks to human health~~ in the Study Area due to exposure to TPAH.

98. Page 28, Section 3.1, First bullet: Revise "Ecological risks to the benthic community in some portions of the Study Area are caused by direct exposure to TPAH in porewater at concentrations above risk-based thresholds." to "Ecological risks to the benthic community in some portions of OU3 are caused by exposure to petroleum hydrocarbons in both the sediment and the sediment porewater at concentrations above risk-based thresholds."

99. Page 28, Section 3.1 last (Copper) bullet, first sentence: Revise as follows:

    a. Risks to human health were within or below acceptable EPA values ~~There are no risks to human health~~ in the Study Area due to exposure to copper.

100. Page 29, Section 3.1, last (Lead) bullet, first sentence: Revise as follows:

    a. Risks to human health were within or below acceptable EPA values ~~There are no risks to human health~~ in the Study Area due to exposure to lead.

101. Page 29, Section 3.1, last paragraph says, "From an ecological perspective, risks…are generally similar to the four Phase 2 reference areas…" Delete this sentence. Tissue concentrations of PCBs (the primary HHRA risk driver) in Fish Zones 1 and 3, which correspond to CM 0-2, are very similar to and sometimes higher than in CM 2+ and the tributaries.

102. Page 29, Section 3.1, last paragraph states, "…tissues concentrations in fish and crab are generally lower in OU3 compared to the rest of the Study Area, and as a result, exposure to COCs through consumption of fish and crab caught in the OU3 will be less than in the rest of the Study Area." Revise this sentence to "…tissue concentrations in fish and crab in OU3 are comparable to the rest of the Study Area, and as a result, exposure to COCs through consumption of fish and crab caught in OU3 will be similar to the rest of the Study Area."

103. Page 29, Section 3.2: Add the following text after the first paragraph of Section 3.2:

    a. Importantly, RALs are not the same as Preliminary Remediation Goals (PRGs). PRGs for the Study Area will be determined as part of the OU1 RI/FS process, and remediation goals for the entire Study Area will be selected in a Record of Decision for OU1. This OU3 FFS is evaluating an interim early action for a portion of the OU1 Study Area. Ultimately, any action taken as part of OU3 will need to meet the Remediation Goals selected in the OU1 ROD. Until such as time as the OU1 ROD is signed, IPMs would be used to assess whether an OU3 interim early action is consistent with achievement of the OU1 goals, or whether additional cleanup activities related to the OU3 portion of the Study Area are needed.

104. Page 30, Section 3.2, first paragraph: Revise this paragraph as follows:

    a. The five COCs set forth in Table 1 of the SOW (USEPA 2019) are TPCB, TPAH, D/F, copper, and lead. USEPA provided the following ranges of RALs for the three primary COCs, based on an evaluation of surface sediment concentrations measured in regional reference areas <u>as well as best professional judgement</u>:

105. Page 30, Section 3.2, Paragraph 2: The reference data used to develop the dioxin/furan (D/F) RAL is limited, resulting in a higher level of uncertainty for D/F compared to the other COCs. Provide additional justification to support this RAL, considering the associated high level of uncertainty.

106. Page 30, Section 3.2, second paragraph, first sentence: Revise as follows:

    a. For D/F, there is no EPA-developed RAL range. However, consistent with the overall approach used by USEPA to select RALs for TPAH, TPCB, and copper (i.e., selecting values that represent the upper range of concentrations found in reference areas with similar characteristics as Newtown Creek <u>combined with best professional judgement</u>), a value of 200 nanograms per kilogram (ng/kg toxic equivalence quotient [TEQ]) total D/F is recommended as the D/F RAL for OU3.

107. Page 30, Section 3.2 – Remedial Action Levels and Target Areas, second paragraph: Provide more rationale and backup for selection of the 200 nanograms per kilogram (ng/kg) D/F toxic equivalence quotient (TEQ) RAL, including why Westchester Creek was selected as the most appropriate reference area to use for developing a proposed D/F RAL (there were four reference areas in the baseline ecological risk assessment [BERA]). Westchester Creek had the highest total D/F TEQ, and the mean total D/F TEQ was two to three times higher than the other three BERA reference areas.

108. Page 30, Section 3.2, Paragraph 3, First and second sentences: Provide a discussion of the data evaluated for the360 mg/kg value used for the lead RAL. Additionally, it should be stated that this value is for evaluation purposes in the OU3 FFS only and that a final PRG for Lead is being developed as part of OU1.

109. Page 30, Section 3.2, Paragraph 3: This paragraph notes that the only exposure pathway for lead is incidental ingestion of sediment by spotted sandpipers while foraging in intertidal areas and that intertidal habitat in OU3 is very limited (OU3 is approximately 75 acres, while the intertidal habitat is approximately 1.5 acres). Include references to past documents (in this paragraph) to support these points.

110. Page 30, Section 3.2, last paragraph: EPA notes that the Phase 1 data includes a surface sediment sample located near the mouth of Newtown Creek (approximately CM 0.1) that exceeds the TPAH (17) RAL of >85 mg/kg (97.939 mg/kg). The sample ID is NC003SG-000015-20120506 and it has the following coordinates, X: –73.960746 Y: –40.737529. EPA also noted that this sample is flanked by two nearby samples that were collected in 2014, NC003SC-B-000015-20140722 and NC003SC-F-000012-20140722. Both of these samples have TPAH (17) concentrations below the RAL (18.561 mg/kg and 2.231 mg/kg). Explain why the sample location described above that exceeded the TPAH (17) RAL was not evaluated or discussed in the FFS report. If the TPAH (17) result was considered

isolated based on the nearby samples, the rationale for excluding it should be provided in the FFS.

111. Page 28, Section 3, last sentence: Indicate within this sentence that the remedial alternatives must either meet the substantive requirements of ARARs or invoke a CERCLA ARAR waiver, as discussed in Section 3.5.

112. Page 31, Section 3.3, first paragraph, second sentence: Remove "to the extent practicable" from this sentence.

113. Page 31, Section 3.3, first paragraph, fourth sentence from the end of the paragraph: Remove this language, as the Study Area-wide RAOs are unknown.

114. Page 31, Section 3.3, first paragraph, fourth sentence: Revise as follows:

    a. These RAOs will set Study Area-wide remedial expectations for OU1, which includes ~~including~~ OU2 and OU3.

115. Page 31, Section 3.3, second paragraph: Revise the second paragraph in Section 3.3 as follows:

    a. Importantly, the RAOs should also reflect objectives that the cleanup can meet. The draft, anticipated OU1 RAOs, could not be achieved through any interim action focused solely on CM 0-2. The following is a quote…

116. Page 31, Section 3.3, third paragraph, first bullet: Revise the RAO to reflect General Comment 2.

117. Page 31, Section 3.3, fourth paragraph: Since the Study Area-wide RAOs are unknown, it is not certain that achieving the RAO for OU3 will achieve those RAOs. Remove this sentence and the following three bullets.

118. Page 32, Section 3.4, first paragraph, second sentence: Revise as follows:

    a. Therefore, the long-term measure of success for the OU3 remedial action is that surface sediment COC concentrations ultimately meet the remediation goals established for OU1 of the Site~~, higher of risk-based goals or long-term equilibrium surface sediment COC concentrations that reflect the influence of ongoing external COC sources~~.

119. Page 32, Section 3.4, first paragraph, last sentence: The long-term measure of success for the OU1 remedial action is unknown. Remove this statement.

120. Page 32, Section 3.4, second paragraph: Revise the text to indicate that all COCs of the site (not the focused five COCs) are to be evaluated in the action-specific IPMs.

121. Page 32, Section 3.4, second paragraph, last sentence: The text indicates that the goal of the OU3 remedy is to achieve the action-specific IPMs. However, as written, the action-specific IPMs are questions rather than goals to be achieved. See General Comment 3 and revise the text for clarification.

122. Page 32, Section 3.4, third paragraph: See General Comment 3. In accordance with the AOC Statement of Work (SOW), revise the action-specific IPMs to be based on a combination of risk-based, background-based, and reference-area-based information. As the action-specific IPMs stand now, they focus primarily on reference-area-based information through the inclusion of RALs. Additionally, revise the IPMs to focus on decreasing COC concentration trends rather than on equilibration over time. Finally, the reference areas that are used to evaluate the proposed alternatives were not all Phase 2 reference areas and have been used inappropriately. Phase 2 reference areas were carried through the evaluation process and used in the BERA and RI to indicate a range of conditions present in urban water bodies. The four referenced in the FFS here are mostly Phase 1 reference areas and are all of industrial/CSO category whose conditions are not only reflective of current activity and inputs but reflect a history of use and disposal practices. The Phase two reference areas should be used to generate a range of SWACs for the FFS.

123. Page 32, Section 3.4, third paragraph: The data from the performance monitoring will be used to confirm whether the CSM and positions presented in Section 2 are accurate. Revise the text to indicate that the performance monitoring will be used to evaluate the degree to which the EA is achieving the action-specific IPMs for OU3. Also see General Comment 3.

124. Page 32, Section 3.4, fifth paragraph, first sentence: This sentence references preliminary estimates of long-term equilibrium concentrations to support a qualitative evaluation of the alternatives in Section 6.4. Revise the text to indicate whether contaminant concentrations are expected to trend downward based on the model and remove mention of the long-term equilibrium concentrations.

125. Page 33, Section 3.4, first paragraph of the page, second sentence: Delete "In the interim, the EA PMP will provide further data to evaluate site-specific contributions to long-term sediment equilibrium conditions."

126. Page 33, Section 3.4, second to last sentence in paragraph in section: Revise this section as follows:

    a. Should the EA move forward, the PMP will form the basis for confirming ~~remedy~~ the success of the interim remedy, and the degree to which it ~~the EA~~ is moving toward achieving ~~the~~ tentative, anticipated RAOs for OU1 ~~RAO for OU3~~.

127. Page 33, Section 3.5, first paragraph, first sentence: Revise the first sentence as follows:

    a. This section discusses potential ARARs for the Site. The ARARs discussed in this section may require ~~consideration or~~ attainment during implementation of the various remedial alternatives developed in this FFS.

128. Page 33, Section 3.5 second paragraph, first sentence: Revise the first sentence as follows:

    a. ARARs are promulgated standards, requirements, criteria, or limitations under federal environmental laws that apply directly to a CERCLA remedial action ~~and~~ or which are considered relevant and appropriate to the remedial action.

129. Page 33, Section 3.5: ARAR identification – Section 3.5 only identifies "key" ARARs but does not indicate how they were determined to be "key" over others. They also identify how alternatives would address the threshold criterion of compliance with ARARs ahead of identifying the alternatives, which is premature. Delete analysis of ARARs with respect to the alternatives from this section and related subsections.

130. Page 33, Section 3.5: ARAR identification – There are inconsistencies in the ARARs tables in Appendix A (Tables A1 through A3) in the identification of specific ARARs and TBCs from what is discussed in EPA's *CERCLA Compliance with Other Laws Manual* (1988) and other relevant EPA ARAR guidance. One example is that the Clean Air Act NAAQS are identified as TBCs even though they are promulgated. This also implies the stringency test was not applied between federal and state potential ARARs. In addition, the presentation of those potential ARARs does not capture all of the relevant information suggested by that guidance (e.g., applicable versus relevant and appropriate). Revise the ARARs table in accordance with EPA's "CERCLA Compliance with Other Laws" and other relevant EPA ARAR guidance and apply the stringency test between federal and state potential ARARs.

131. Page 33, Section 3.5: ARAR Identification – Revise this section to include a description of potential ARAR waivers under CERCLA and which ones may be considered as part of the analysis for "compliance with ARARs," particularly any use of the interim measures waiver given the contemplated EA is an interim remedial action.

132. Page 33, Section 3.5 ARAR Identification – While waste ARARs are identified and waste assumptions are made in the cost estimates, revise this section and, as needed, the description of alternatives to include discussion of whether there is a need to determine if listed or characteristic hazardous waste or Toxic Substances Control Act (TSCA) wastes would be generated as a result of the remedial alternative (for ARARs identification and compliance).

133. Page 33, Section 3.5.1 Chemical Specific ARARs and TBCs – The statement "and include state standards that may have been promulgated but have not been consistently applied" is not a statement typically made with respect to general ARAR/TBCs identification and appears to be invoking the possibility of an "inconsistent application" CERCLA ARAR waiver. Delete this portion of the sentence or confirm the reason for inclusion of this statement for EPA's consideration.

Section 4

134. Page 36, Section 4.1, first paragraph: If applicable to remedial technologies included in the FFS alternatives, include text referencing the status of any ongoing treatability studies.

135. Page 36, Section 4.1.1, third sentence: The importance of the numbered statements for this FFS is unclear. Delete or provide the rationale for inclusion of this sentence.

136. Page 36, Section 4.1.1, last sentence: Include additional supporting statements about the processes known to be currently occurring or reference the section where this is discussed. The identified processes should include upland source control measures and natural recovery mechanisms (particularly deposition of less contaminated materials, if currently occurring).

137. Page 37, Section 4.1.2, third and fourth sentences: Rewrite this sentence to identify the four IC categories and describe those IC categories and instruments in conformance with EPA's IC guidance documents *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* (2012), *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites* (2012), and *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups* (2000).

138. Page 38, Section 4.1.4, second paragraph: Delete (i.e., enhanced MNR).

139. Page 38, Section 4.1.5: Portland cement is not considered a sorbent amendment and is typically used in solidification/stabilization techniques. Remove Portland cement from the examples of sorbent amendments. In the last sentence, revise the word "absorptive" to "sorptive" to account for both absorption and adsorption since most amendments rely on adsorption mechanisms.

140. Page 39, Section 4.1.7: "Dredged Material Management" is described as including dewatering, ex situ treatment, and disposal. This is inconsistent with RI/FS guidance that indicates separate GRA categories. This is particularly important with respect to the treatment GRA since that is evaluated as a distinct balancing criterion in detailed analysis and disposal could occur without treatment in some instances. List and identify these component GRAs/technologies separately.

141. Page 39, Section 4.2 See Specific Comment 15 regarding technology screening.

Section 5

142. Page 41, Section 5.1, Note 20 (at bottom of page) and Note 5 on Figures 5-1 through 5-3: These notes state that for "two sample locations near CM 1.65, only a portion of the corresponding D/F Thiessen polygons are included in the Target Areas." Because (1) CM 1.65 is not defined or shown on these figures and (2) Note 7 on Figure 3.4 indicates that Thiessen polygons are not shown for total D/F because of inconsistent data density compared to other COCs, it is unclear which portion of the corresponding D/F Thiessen polygons are included in the Target Areas. Revise these notes for clarity and revise Section 3 to discuss this issue when defining target areas and RALs. These notes also state it is assumed the area of remediation in this area would be refined during remedial design. Revise the notes to clarify how the area will be refined during remedial design (e.g., through remedial design investigation or other means).

143. Page 42, Section 5.2.1: Five-year reviews are not mentioned as a common element. Given ongoing monitoring, the anticipated schedule for OU1, and that an unlimited use/unlimited exposure scenario has not been demonstrated, five-year reviews appear to be pertinent and should be included as a common element of all alternatives.

144. Page 42, Section 5.2.1.1: Provide more description in this section about ICs that potentially apply. For example, in reference to activity restrictions on fishing/crabbing, text from Table 4-1 could be included to indicate that restrictions in CM 0–2 could be implemented through fishing/crabbing regulations, license programs, and

posting/maintenance of signs and that those restrictions/actions would require coordination with NYSDEC.

145. Page 42, Section 5.2.1.2: This section describes the MNR component of the remedial alternatives. As per General Comment 10 delete this section.

146. Page 42-44, Section 5.2.1.3: Provide more description in this section about dredging activities, including sequence of operations. For example: Will turbidity monitoring be implemented? Will post-dredging confirmation sampling be conducted? When will post-dredging bathymetry surveys be conducted? Also, expand the discussion regarding the range of depths that were considered in the development of the remedial alternatives.

147. Page 43, Section 5.2.1.3, first (incomplete) paragraph, last sentence: Revise the end of the last sentence to include "navigational needs" within the parenthetical examples.

148. Page 43, Paragraph 2: Provide justification for use of the neatline factor of 1.2 (e.g., versus a factor of 1.5) and make it clear that this assumption is for FFS alternative purposes.

149. Page 43, Paragraph 3 and Table 2: The second note in Table 5-2 indicates that debris was calculated as 15 percent of the dredge volume. Provide justification to support this assumption in the text and/or table and make clear that this assumption is for FFS alternative purposes.

150. Page 44, Section 5.2.1.4: In situ treatment is retained as a GRA/technology; however, this section indicates that "…backfill for all alternatives would consist of sand with organic content equivalent to existing sediments (using amendments as necessary, which would provide in situ treatment)." It does not appear that the in-situ treatment technology was fully evaluated (i.e., compared to clean cover) in this FFS. It is also unclear from this section how it will be determined if amendments are necessary. Provide additional detail and clarification as needed throughout the document. Additionally, Table 5-2 assumes a volume of granular activated carbon (GAC) amendment as part of the backfill volume for each of the alternatives. Provide additional detail on how/why the type and amount of amendment was selected.

151. Page 44, Section 5.2.1.4 and Table 5-2: This section indicates the backfill placement thickness would be equivalent to the dredge depth (assumed to be 2 feet); however, there is no indication that backfill placement thickness would also include the 6-inch overdredge. Table 5-2 presents dredge removal volume as equivalent to backfill volume, indicating the backfill placement thickness would include the 6-inch overdredge. Correct or provide clarification on this discrepancy in Table 5-2 and Section 5.2.1.4.

152. Page 44, Section 5.2.1.4: Provide more description on how backfill would be accurately placed and clarify the sequence of operations. For example, would conventional dredge equipment be used to place backfill or would alternative equipment such as a Telebelt® or roller drum be used? In addition, a description of residuals and resuspension controls during backfill placement should be included. Further, the text only discusses disturbance from prop wash at a localized depth (top 6 inches). Considering the presence of erosional areas within OU3 and the potential for prop wash to impact deeper depths, add text to explain about erosional environments (net or episodic) and the need to protect backfill.

153. Page 44, Section 5.2.1.5: Provide more detail on transport scows, including if they will allow dewatering of dredged material using appropriate best management practices (BMPs) (e.g., filter fabric). In addition, include a description of the assumed waste streams (e.g., Resource Conservation and Recovery Act [RCRA] hazardous versus nonhazardous waste, TSCA waste) and any need to treat to meet potential land disposal restrictions (LDRs). Additionally, note that RCRA hazardous waste versus nonhazardous (solid) waste needs to be substantiated from data that represent the hazardous characteristics of the wastes, as generated, for disposal.

154. Page 44, Section 5.2.1.5: Provide more detail on the components of the on-site water treatment system, including general treatment process and what COCs and other contaminants will be treated.

155. Page 45, Section 5.2.1.6: This section indicates that one of the OU3 action-specific IPMs is "are surface sediment COC concentrations in Target Areas below RALs immediately after construction?" As noted in General Comment 2, the RALs referenced in the RAO are used to define the target areas for active remediation and do not serve as the cleanup goal for the action. IPMs, which (per General Comment 3) should be revised to provide a quantitative measure of EA progress and success, serve as the PRGs for the EA. In addition, the cost estimates developed for the alternatives include a "confirmation surveying" component. Add a brief description of this work to this section if it is being considered a performance monitoring activity. If it is considered a separate component, include it as a separate common element.

156. Page 45, Section 5.2.1.7, first bullet: This bullet should also include mobilization/demobilization, construction management, and utility coordination.

157. Page 45, Section 5.2.1.7, second bullet: Provide more detail on and examples of anticipated predesign investigation data needs. These data needs should be able to be (at least partially) evaluated now, instead of at the outset of the design phase. Additionally, revise the first part of the first sentence from "PDI data <u>may</u> be…" to 'PDI data <u>will</u> be…".

158. Page 46, Section 5.2.2, third sentence: The importance of this sentence for this FFS is unclear. Delete or provide the rationale for inclusion of this sentence.

Section 6

159. Page 49, Section 6, last paragraph, fourth sentence: This sentence indicates that Table 6-1 presents the detailed evaluation in tabular form, so that the minor differences across alternatives are easier to discern. However, the purpose of this section is indicated to be the assessment of the individual alternatives against the EPA evaluation criteria; the comparative analysis of alternatives that focuses upon the relative performance of each alternative against those criteria is presented in Section 7. Revise the sentence to clarify the purpose of each of these sections.

160. Page 50, Section 6.1, last paragraph: Revise the text to clarify that the two modifying criteria are addressed following comment on the proposed plan.

161. Page 50, Section 6.1.1, first bullet: Add the following sentence to the end of the first (RALs) bullet:

    a. <u>They are not equivalent to cleanup goals.</u>

162. Page 50, Section 6.1.1, second bullet: The first sentence in this bullet indicates there is a single area of active remediation. However, there are different target areas because of the varying levels of RALs used to define the various target areas. Revise the text for clarification.

163. Page 50, Section 6.1.1, third and fourth bullets: Revise these bullets based on comments provided in Sections 3.3 and 3.4. See General Comments 2 and 3 and Specific Comments 114 through 128.

164. Page 51, Section 6.2: The evaluation of this threshold criterion is not entirely in conformance with EPA RI/FS guidance. The discussion presented in Section 6.2 is centered on the achievement of the RAO while the associated evaluation presented in Table 6-1 more fully reflects all the components of this evaluation criterion. For example, the potential for minimizing human and ecological exposures to contaminated sediment is presented in Table 6-1, but an evaluation method is not presented in Section 6.2 that would reflect this. Revise Section 6.2 to better reflect the components of this threshold criteria presented in Table 6-1 (as stated in Table 6-1: "Addresses the overall ability of an alternative to eliminate, reduce, or control potential unacceptable exposures to hazardous substances in both the short and long term and evaluates whether an alternative provides adequate overall protection to human health and the environment").

165. Page 51, Section 6.2: Currently there is no discussion regarding how sediments mobilized during the early remedial action may result in off-site migration of contaminated sediments and resuspension in the surface water, impacting off-site areas and resulting in cross-media impacts. Revise the text to include evaluation of this aspect of the criterion.

166. Page 51, Section 6.2: A complete risk assessment has not been conducted for the reference areas. As such, focusing the evaluation of overall protection of human health and the environment solely on a comparison to the reference areas is inappropriate. A comparison to reference areas should be presented as one line of evidence in the evaluation of overall protection of human health and the environment. Background concentrations, risk-based PRGs and ARARs should also be considered, and the IPMs should be evaluated on an ongoing basis to determine whether progress towards achieving the RAO is being made. . See General Comment 3.

167. Page 51, Section 6.2, second paragraph, first bullet, third sentence: This sentence indicates postconstruction surface-weighted average concentrations (SWACs) are estimated, assuming that the clean post-dredge backfill material would have a concentration of 0 milligrams per kilogram for all COCs. However, the regulatory definition of clean fill does not necessarily mean that COCs will have concentrations of zero. Particularly, it would be rare for inorganic COCs to have concentrations of zero, as they naturally occur in soils that could be used for backfill. Revise the postconstruction SWAC estimates to

include conservative assumptions regarding COC concentrations in clean backfill. A pertinent reference document for these concentrations may include NYSDEC Part 375, Soil Cleanup Objectives.

168. Page 51, Section 6.2, second paragraph, first bullet, second paragraph, second sentence: Remove this statement. While the text can mention that total PCBs contribute to unacceptable risks to human health and to a number of ecological receptors, the evaluation should place equal weight on all COCs for the site.

169. Page 51, footnote 22: Revise footnote 22 as follows:

    a. While comparison to reference areas is not an action-specific IPM, it is a useful comparison for the purposes of evaluating alternatives in this FFS, because RALs were developed by USEPA based on an evaluation of surface sediment concentrations measured in regional reference areas as well as best professional judgement. Comparing post-construction SWACs resulting from these ranges of RALs to SWACs in reference areas, as well as concentrations in the East River, allows for a straightforward relative comparison across alternatives.

170. Page 51, footnote 23: Reference Areas: The reference areas that are used to evaluate the proposed alternatives were not all Phase 2 reference areas and have been used inappropriately. Phase 2 reference areas where carried through the evaluation process and used in the BERA and RI to indicate a range of conditions present in urban water bodies. The four referenced in the FFS here are mostly Phase 1 reference areas and are all of industrial/CSO category whose conditions are not only reflective of current activity and inputs but reflect a history of use and disposal practices. The Phase 2 reference areas should be used to generate a range of SWACs for the FFS.

171. Page 52, Section 6.2, first full paragraph on the page: Revise the text to provide supporting rationale using the data available to explain why this is a reasonable assumption or remove this statement.

172. Page 52, Section 6.2, first bullet on the page: Summarize the supporting evidence provided in detail in Section 2 to explain why the alternatives are expected to meet the action-specific IPMs over time. Additionally, revise this text based on General Comment 3 on IPMs and Specific Comments 122 through 126 on Section 3.4.

173. Page 52, Section 6.2, first bullet on the page: The action-specific IPMs are written as questions rather than goals. As such, the action-specific IPMs cannot be met over time. Revise the text to acknowledge that additional data collected over time will be used to evaluate temporal trends to demonstrate whether the EA achieves the IPMs. See General Comment 3 on IPMs and Specific Comments 122 through 126 on Section 3.4.

174. Page 52, Section 6.3: Revise the analysis of compliance with ARARs to address the concerns indicated in General Comment 14 and Specific Comments 131 through 135. Specifically, the alternative evaluation information in Section 3.5 should be moved to Section 6.3 and the additional deficiencies should be addressed. Additional comments on compliance with ARARs evaluations are included for Table 6-1 (See Specific Comments 218 through 232).

175. Page 52, Section 6.4, throughout this section remove the words "Magnitude of Residual Risk" from the sub-bullet headings.

176. Page 52, Section 6.4, first bullet point, first paragraph, last sentence: Revise the last sentence as follows:

    a. Because this is an EA and ~~the risk-based metrics~~ site-wide cleanup goals have not yet been determined ~~developed~~, evaluations of ~~long-term~~ post-action surface sediment ~~equilibrium~~ concentrations represent a preliminary way of evaluating long-term effectiveness.

177. Page 52, Section 6.4, first bullet point, third paragraph, first sentence: Change "contribute to" to "impact".

178. Page 53, Section 6.4, first paragraph, third sentence: Revise the third sentence as follows:

    a. However, as discussed in Section 2.1.1, but what is not illustrated on Figures 6-1 through 6-4, is that existing evaluations show that the East River is the primary source of the solids that deposit on the sediment bed in OU3 (accounting for 85% to 95% or more of the ongoing sedimentation in OU3, depending on the distance from the mouth of the creek).

179. Page 53, Section 6.4, first paragraph, fourth sentence: Revise the fourth sentence as follows:

    a. This information indicates that the relatively low East River particulate phase chemical concentrations will likely be the ~~a~~ major…

180. Page 53, Section 6.4, first paragraph: The text states that "…other ongoing external inputs that contribute to long-term equilibrium concentrations will have a lesser impact on long-term OU3-wide SWACs, although these ongoing external inputs could have an impact on a localized basis." The basis for this conclusion is unclear. Revise the text to include supporting information and rationale. Also see General Comment 8 regarding contaminant loading uncertainties and General Comment 4 regarding long-term equilibrium. Additionally, if the early action is defined as an interim action, the evaluation criteria related to long-term effectiveness in an interim action, represented in a focused FS, is bounded by the duration until the subsequent follow-up/final action is taken. Revise the description of the evaluation criteria where needed to reflect the analysis for an interim action.

181. Page 53, Section 6.4, second paragraph, first sentence: Revise the first sentence as follows:

    a. … solids from the East River, ~~and~~ other ongoing external inputs and through movement of sediment within the creek itself.

182. Page 53, Section 6.4, second paragraph: Add (and complete) the following sentence to the end of the second paragraph:

    a. This will be reviewed as part of OU1…

183. Page 53, Section 6.4, third paragraph, first sentence: revise as followings:

a. … contribute to OU3 (i.e., East River and point and non-point source discharges) was combined…

184. Page 53, Section 6.4, third paragraph, second sentence: Revise as follows:

a. … for East River and the ~~point source discharge~~ other external inputs categories that contribute most to net sedimentation in OU3…

185. Page 53, Section 6.4, third paragraph, third sentence: Explain or reference the calculations described in this sentence.

186. Page 54, Section 6.4, first bullet point: This section should acknowledge that this hypothesis is not supported by existing data and there is a need for more data to confirm this statement. Performance monitoring data will be needed to verify Position 4. The assessment metric should be defined as a downward trend in contaminant concentrations, not achievement of equilibrium.

187. Page 54, Section 6.4, first bullet point: Add the following sentence to the end of the first bullet point:

a. However, the conclusions of this evaluation will be verified through the PMP, should an action occur.

188. Page 54, Section 6.4, second bullet point: Add the following sentence to the end of the second bullet point:

a. Again, the conclusions of this evaluation will be verified through the PMP, should an action occur.

189. Page 55, Section 6.4, first paragraph: The last sentence of this paragraph states that areas with backfill have less uncertainty regarding potential for recontamination due to sediment transport and prop wash. Clarify if an erosion analysis, including prop wash impacts, was conducted to verify that the backfill will remain in place without the need for an armor layer. The long-term stability of backfill needs to be evaluated in addition to its ability to contain migration of dissolved concentrations to the surface. Also revise the text to discuss the potential for resuspended contaminated sediments from the tributaries to be carried into the main stem during falling tides and redeposited on top of the placed backfill.

190. Page 55, Section 6.4, Paragraph 4: Both this paragraph and Section 5.2.1.3 indicate that "consistent with the SOW, the development of remedial alternatives for this FSS considered a range of depths (see Section 5.2.1.3), followed by an equivalent backfill thickness." No additional information is provided regarding this analysis. This information should be added to the document and include rationale as to why a dredge to clean option (i.e., RAL exceedance) was not identified for detailed analysis. Additionally, it is not clear how the 2-foot-thick dredge depth in this section or Section 5.2.1.3 was selected. Both sections just indicate disturbance is generally limited to 0 to 12 inches, but this does not explain the dredge depth selection of 2 feet. Provide clarification. Also, the discussion of the adequacy and reliability of controls references Section 4, which is technology identification. Revise to provide alternative specific analysis of this criterion..

191. Page 55, Section 6.5: This section indicates that sediments will be addressed by treatment (i.e., amendment backfill), however, earlier sections of the report (e.g., Section 5.2.1.4) indicate that amendment in backfill will only be used as necessary. There is no explanation about how it will be determined if amendment is necessary and it is not clear if the use of backfill amendment will be carried through into the design. It is also not clear how this balancing criterion was assessed given the uncertainties listed above. Add clarification regarding this issue and the ex situ treatment component of each alternative to the report. The ex situ treatment piece (i.e., a description of the assumed waste streams [e.g., RCRA hazardous versus nonhazardous waste, TSCA waste] and any need to treat to meet potential LDRs) to each alternative should be more fully described here as well. A summary from Table 6-1, which appears to be more comprehensive, can be included here.

192. Page 56, Section 6.6., first bullet: Revise the text to remove discussion of long-term equilibrium and include an evaluation of downward COC trends until the OU1 remedy is selected and remedial goals for the entire Study Area (OU1) are selected. See General Comment 3.

193. Page 56, Section 6.6: Second bullet: indicates that potentially unacceptable community risk during remedial construction would occur through impacts to "quality of life" during the construction phase of each alternative. Quality of life generally refers to the human use environment and the potential for each alternative to impact aesthetics, odor and dust, traffic, noise, commercial navigation, and recreation. This aspect of short-term effectiveness should address any risk that results from implementation of the proposed remedial action, such as dust from excavation, transportation of hazardous materials, or air-quality impacts from a stripping tower operation that may affect human health. The short-term effectiveness evaluation should be revised to focus on safety and to include potential mitigative measures for these impacts, not just the impacts themselves.

    a. Green and Sustainable Remediation (GSR) metrics can incorporate environmental justice indicator(s) to, at a minimum, more equally distribute unintended community impacts during remedial action activities. EPA's Environmental Justice Screening and Mapping Tool can be used to identify community tax block groups that contribute the most toward the nationwide disparity in each environmental justice index. BMPs can be implemented during remedial design to optimize material and equipment hauling routes in a manner that minimizes increases in local traffic, noise, exhaust, and odor in disparate community tax block groups. There may be an opportunity to incorporate input from the Community Advisory Group (CAG) on additional environmental justice indicators and community impact metrics.

    b. Is there a difference among the proposed alternatives on the extent of shoreline adjacent to target areas that is located in disparate community tax block groups defined by EPA's environmental justice index?

194. Page 56, Section 6.6: Third bullet, "Additionally, greenhouse gas (GHG) emissions were calculated to quantitatively compare the potential air quality impacts associated with each alternative. The GHG inventory accounts for the major sources of direct emissions

resulting from the activities associated with implementation of each potential remedial alternative."

The GHG emissions evaluation performed compares the carbon footprint of remedial alternatives not air quality impacts. Per EPA's *Greener Cleanups: Methodology for Understanding and Reducing a Project's Environmental Footprint* (2012), the carbon footprint is the quantification of carbon dioxide and other GHGs emitted into the air by a particular activity, facility, or individual. This common footprint measure was established in the past because emissions of carbon dioxide and other GHGs have been linked to climate change. (Section 1.1 Background, page 1.)

A comparison of air quality impacts from proposed alternatives generated emissions would need to consider, at a minimum, particulate matter and hazardous air pollutants (HAPs) emissions. This assessment can be performed using EPA's Spreadsheets for Environmental Footprint Analysis (SEFA), refer to https://clu-in.org/greenremediation/SEFA/.

To address this comment, the GHG emission evaluation should either be revised to a carbon footprint evaluation or incorporate air quality emission metrics such as particulate matter and HAPs. The evaluation should also discuss impacts related to off-site transport and disposal, and potential mitigative measures for these impacts, not just the impacts themselves.

195. Pages 57 and 58, Section 6.7: The Technical Implementability bullet under this section indicates that existing shoreline conditions may pose implementability concerns based on preliminary assessment of the bulkhead conditions during the SCS investigation. The section goes on to indicate this issue will be further evaluated during the design phase, and if dredging could affect the stability in a location, the approach may be modified (e.g., dredging offsets, dredge and backfill, clean cover without dredging). Revise this section to consider the implementability of bulkhead repairs or removal and replacement, and the removal of possible obstructions that may need to be completed to allow for the dredging approach without modification or offsets.

196. Page 58, Section 6.7: The reliability criterion is identified in the text, but details of the evaluation of the alternative with respect to this criterion are not provided in Table 6-1. Provide details of the evaluation of this criterion in Table 6-1. Additionally, under the administrative implementability criterion, defining regulatory requirements in the form of ARARs is double counting that criterion (already addressed as the compliance with ARARs threshold criterion). The consideration of regulatory requirements in implementability is the ability to obtain permits for off-site actions. In this case, the only off-site action would be the disposal of wastes after on-site processing.

197. Page 58, Section 6.8, second and third sentences. The cost information presented in Appendix C doesn't fully address concerns and objectives indicated in EPA's *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (2000), particularly the inclusion of backup information for quantities and unit costs and the application of contractor markups, as well as professional/technical services markups. Address these deficiencies.

198. Page 58, Section 6.8, second paragraph: Revise second paragraph to include rationale for 5 years of proposed monitoring.

Section 7

199. Page 60, Section 7: Revise the comparative analysis text as needed to reflect any edits made to Section 6 as a result of EPA's comments on that section.

200. Page 60, Section 7.1, second paragraph, first sentence: The alternatives do not use different RALs; rather, the alternatives target different areas for remediation based on a comparison of COC concentrations in surface sediment to various levels of RALs. Revise the text for clarification.

201. Page 61, Estimate Tim-Zero SWAC for CM 0-2 Table: Revise the report to include an explanation as to why the post-action SWAC for PCBs is lower for Alternative 4 compared to Alternative 3, even though the RAL is the same for both alternatives.

202. Page 61, Section 7.1, second paragraph of the page, third sentence: Remove the following text from this sentence: "Therefore, Alternatives 3 and 4 are preferable to Alternative 2, because they" and replace with "Alternatives 3 and 4."

203. Page 61, Section 7.1, third paragraph: Provide a brief summary in this section of the evidence to support the statement that the alternatives are expected to meet the action-specific IPMs over time. Additionally, indicate whether there are any differences between the alternatives in achieving the action-specific IPMs.

204. Page 61, Section 7.2: Revise the text to include discussion on the potential use of CERCLA waivers.

205. Page 62, Section 7.3, fourth paragraph, first sentence: Appendix D only provides a framework for the PMP. Revise the first sentence to clarify this point.

206. Pages 62 and 63, Section 7.4: This section indicates that this criterion was assessed by calculating the acreage and volumes of sediment that would be addressed by treatment for each alternative. Earlier sections of the report state that backfill will be amended as needed (e.g., Section 5.2.1.4) but do not provide any additional detail about how it will be determined if amendment is needed. Table 5-2 indicates that 500 cubic yards (cy), 600 cy, and 700 cy of GAC amendment are included in Alternatives 2, 3, and 4, respectively, but no explanation is provided in the text or table regarding how these numbers were developed. They appear to correspond only to total backfill volume, meaning assessment of this criterion is solely based on dredge footprint. Add additional clarification and/or information to this section, including the ex situ treatment piece (i.e., a description of the assumed waste streams [e.g., RCRA hazardous versus nonhazardous waste, TSCA waste] and any need to treat to meet potential LDRs) to fully evaluate this criterion.

207. Page 64, Section 7.5: The first bullet point states that Alternatives 2, 3, and 4 are not expected to increase noise above current levels near the site. Clarify what available information was evaluated to make this determination, such as a comparison of current noise levels compared to noise levels for similar work conducted at other sites. Also discuss water and air quality monitoring during construction and safety risk to the public

from water transport of wastes and backfill in this section. Additionally, prepare a site management plan or applicable document to outline procedures to mitigate generation of odors, dust, and noise during remedial action activities. Revise the comparative analysis of all community impact metrics in the FFS to reference known site BMPs to be implemented to alleviate unintended impacts. This comment is also applicable to Table 6-1 (Page 8).

208. Page 66, Section 7.6: The access agreements bullet point discusses a preliminary evaluation performed to identify underutilized parcels along Newtown Creek. Add the general location of potential staging areas identified for the FFS as a result of the preliminary evaluation to Figures 5-1 through 5-3. In addition, under administrative implementability, discussing regulatory requirements in the form of ARARs is double counting that criterion (already addressed as the compliance with ARARs threshold criterion). The consideration of regulatory requirements under the implementability criterion is the ability to obtain permits for off-site actions. In this case, the only off-site action would be the disposal of wastes after on-site processing.

209. Page 67, Section 7.8, second paragraph, first sentence: Revise the first sentence as follows:

    a. With respect to risk reduction, Alternatives 3 and 4 ~~are preferable~~ provide greater reduction than ~~to~~ Alternative 2, because they both remediate to the low RAL for TPCB, which is important given the contribution of TPCB to unacceptable human health and ecological risks.

210. Page 67, Section 7.8, fourth paragraph, first sentence: Revise the first sentence as follows:

    a. Of the two active alternatives that ~~are preferable from a~~ provide greater risk reduction ~~standpoint~~ (Alternatives 3 and 4), Alternative 3 is the least costly.

211. Page 67, Section 7.8, last sentence (on page): Delete this sentence.

212. Page 67, Section 7.8: Revise this section to reflect comments (See Specific Comments 205 through 207) made on Sections 7.1 and 7.2.

Tables

213. Table 5-2. The assumption of quantities of RCRA hazardous waste versus nonhazardous (i.e., solid) waste needs to be substantiated from data that represent the hazardous characteristics of the wastes, as generated, for disposal. Also, there is no column for TSCA waste; so, is the expectation that PCBs will be below the concentration threshold for TSCA regulation? Update the text based on waste categories that reflect the types of off-site disposal facilities and associated pretreatment.

214. Table 6-1: Revise the table to reflect the direction indicated in the General Comments, as well as related Specific Comments pertaining to Section 6 and 7.

215. Table 6-1, Threshold Criterion 1, Alternative 2, first sentence: Revise the text to indicate that this alternative remediates areas where COC concentrations in surface sediment exceed the high RALs. Note that this is not the same for Alternatives 2, 3, and 4.

216. Table 6-1, Threshold Criterion 1, ICs: Provide additional detail on how the ICs to be put in place would achieve the RAOs and action-specific IPMs.

217. Table 6-1, Threshold Criterion 1, MNR: Per General Comment 10, a consideration of MNR as a component of the early action is not appropriate at this stage. Revise the Threshold Criterion 1 discussion to reflect the actions to be taken on the target areas and how they would achieve the RAOs and action-specific IPMs as well as the comments provided on Section 2.1.

218. Table 6-1, Threshold Criterion 1: Revise the RAO discussion, as needed, to reflect any revisions made to the RAO. (See General Comment 2).

219. Table 6-1, Threshold Criterion 2, Compliance with ARARs analysis: While the overall approach used in analysis (as captured in Table 6-1) appears reasonable, the analysis is incomplete for the full range of identified ARARs, including those that are likely significant to the analysis. Revise the report to include discussion of compliance with all identified ARARs, including the potential need for a CERCLA waiver (such as an interim measures waiver) or state variance. Additionally, if the evaluation of this criterion is to focus on a subset of all ARARs, revise the report to include supporting rationale for the selection of the subset of ARARs.

    Alternative 1, first sentence: Provide supporting rationale for this statement, including which chemical-specific ARARs this alternative would comply with and how it complies.

    Alternatives 2, 3, and 4: Provide a description of how the alternatives would meet all chemical-, location-, and action-specific ARARs identified for these alternatives.

220. Table 6-1, Threshold Criterion 2, Alternatives 2, 3, and 4: New York State Water Quality Standards and Federal Emergency Management Agency flood rise requirements are not listed as standards, requirements, criteria, or limitations in Appendix A. Revise the report to address this inconsistency.

221. Table 6-1 Threshold Criterion 2, Alternatives 2, 3, and 4: Revise this evaluation to reflect comments provided on Section 3.5 to include a more robust evaluation of this criterion with respect to all ARARs beyond those that were identified as key ARARs.

222. Table 6-1, Balancing Criterion 1, Page 4 of 12: Provide the basis for the 1,300- to 3,500-year breakthrough times. If the breakthrough times were determined using cap modeling, provide the associated modeling evaluation results, input parameters, and assumptions.

223. Table 6-1, Balancing Criterion 1, Page 5 of 12: Under the discussion of Magnitude of Residual Risk: Minimization of Subsurface Sediment Contamination Impacts Due to Sediment Transport and Prop Wash, include a consideration of prop wash on the cover amendment.

224. Table 6-1, Balancing Criterion 1, Page 5 of 12: Split the dredge material management discussion and use/analysis in alternatives into its three component process options (dewatering, ex situ treatment, disposal) to allow for correct analysis/comparison of alternatives, especially since some wastes may need to be treated before disposal and others may not. In addition to residuals management, include dredging BMPs in the Adequacy of Controls bullet list for Alternative 2 and the dredging bullet point on Page 6 of 12.

225. Table 6-1, Balancing Criterion 1, Page 6 of 12: In the backfilling bullet point for Balancing Criterion 1, revise the text to clarify if migration of dissolved COCs is also expected to be controlled.

226. Table 6-1, Balancing Criterion 2, Page 6 of 12: The assumption of degree of treatment for RCRA hazardous waste and/or TSCA waste versus nonhazardous (i.e., solid) waste needs to be substantiated from data that represent the hazardous characteristics of the wastes, as generated, for disposal. Revise the treatment evaluations based on waste categories that reflect associated pretreatment for off-site disposal based on contaminant characteristics, and include the treatment requirements for disposal (e.g., LDRs).

227. Table 6-1, Balancing Criterion 3, Page 9 of 12: In the Alternative 2 column, the fourth bullet states that the benthic community is expected to recover in a short period of time. Quantitatively define how long this recovery period is expected to be. Additionally, the fifth bullet states that backfill can provide a desirable habitat depending on grain size/composition. This is presented as a positive impact of backfilling even though certain substrates do not provide desirable habitat. Revise the text to acknowledge the current existing state of the habitat and that the habitat impacts of the selected backfill material will need to be evaluated.

228. Table 6-1, Balancing Criterion 4, Page 11 of 12: In the Alternative 2 column, revise the second bullet as follows: "Existing shoreline conditions may pose implementability concerns; 2,900 of 3,400 linear feet of bulkhead or shoreline adjacent to target areas are currently in a condition that may not support dredging from the shoreline."

229. Table 7-1: Update the table, as needed, to make it consistent with any changes made to Table 6-1. Provide the basis for the construction durations, man hours, and scow trips presented in the table and revise the associated text to discuss how these values were calculated.

Appendix A

230. Revise the ARARs table to address concerns indicated in General Comment 14. Specific to these tables, the concerns include identification of the ARAR as either applicable or relevant and appropriate, and a stringency test between the federal and state ARARs.

231. Table A1: No groundwater-related chemical-specific ARARs appear to have been identified. Although the primary action would take place in surface sediments, there is potential for groundwater discharge within the target areas to influence the action (e.g., in situ treatment) where comparison to groundwater standards may be required for

EA effectiveness. Revise Table A1 accordingly to identify groundwater-related chemical specific ARARs.

232. Table A1: No air-related chemical-specific ARARs (federal or state) appear to have been identified. However, the associated emissions concerns were identified in the detailed analysis. Revise Table A1 to include air-related chemical-specific ARARs.

233. Table A1: Provide clarification for why a guideline document developed for Ontario, Canada is included as TBCs. Remove this under the category of State ARARs.

234. Table A2: Regulations that are administrative in nature (e.g., 40 Code of Federal Regulations [CFR] 262 and 263, and 49 CFR 171) would not constitute ARARs. Off-site actions would need to comply with all applicable regulations that include administrative requirements, but that does not mean they would be identified as ARARs given that ARARs are exclusively an on-site concept. Revise the table accordingly.

235. Table A2: Safety laws and regulations (e.g., Occupational Safety and Health Administration requirements at 29 CFR 1904, 1910, and 1926) are not, by definition, ARARs. They are other requirements that, if applicable, have to be complied with. Remove safety laws and regulations from the table.

236. Table A2: Identify what specific class of contaminants would drive National Emission Standards for Hazardous Air Pollutants to be an ARAR.

237. Table A2: The off-site rule is part of the NCP, so it is typically not identified as an ARAR; it is inherent to the CERCLA process. Remove the off-site rule from the table.

238. Table A3: There are several TBCs identified under the federal subhead that appear to be state ARARs or TBCs (e.g., New York State Waterfront Revitalization and Coastal Resources Act, New York City Department of City Planning WRP in 1982). Revise the table to categorize the ARARs appropriately.

Appendix B

239. EPA would like to capture recommendations for the following climate change adaptation measures to consider during remedial design, as applicable:

    a. The current CSM states that the sediment bed in OU3 is net depositional and shear stresses are low, even under significant flood conditions. Because of climate-change impacts, including increased precipitation and sea level rise, site hydrodynamic conditions may change. Include site hydrodynamic parameters in performance monitoring to adequately assess if site hydrodynamic conditions are changing over time and pose a risk to the integrity of the remedial action. Evaluation of climate change vulnerability monitoring should be part of the five-year review.

    b. If additional physical isolation of the cap, such as addition of armor layer, is required based on site conditions, it is recommended to design the layer to resist up to a 100-year flood event at a future planning horizon achievable based on current global climate models, such as 2100. Armor layer design should be informed by hydrodynamic data sets collected during performance monitoring.

c. The stormwater and materials management plan should include consideration of an extreme weather event occurrence.

d. The design should consider the potential for ice scour and erosion of a cap caused by ice jam formations.

Refer to EPA's 2015 "Climate Change Adaptation Technical Fact Sheet: Contaminated Sediment Remedies" (EPA 542-F-15-009) for additional information and potential adaptation measures. This recommendation is also in alignment with the CAG's Newtown Creek Vision Principle Number 12, Plan for Climate Change. The CAG may have additional insight on local resiliency values.

In the past few years, historic storm events have resulted in overwater infrastructure failure, leading to scouring and potential for mobilization of contaminants at riverine cleanup sites. The conditions of the Newtown Creek riverine infrastructure, such as bridges, are CSM resiliency factors that influence the integrity of the selected remedial action. It is recommended to collaborate with NYCDEP on identifying and tracking state of repair of riverine infrastructure that has the potential to impact the remedial action integrity due to failure. Evaluation of remedial-action-related riverine infrastructures state of repair and applicable changes in site conditions should be part of the five-year review.

240. Page 1, Section 1, first paragraph: The GHG emissions evaluation performed compares the carbon footprint of remedial alternatives rather than the environmental footprint, which would typically include particulate matter emissions, HAPs emissions, energy use, and water consumption. In the Introduction, reference EPA's 2016 memorandum, *Consideration of Greener Cleanup Activities in the Superfund Cleanup Process.*

241. Page 2, Section 2, second paragraph: Based on the review of the GHG emissions evaluation, the following remedial components are missing from the data inventory/analysis and are potential primary contributors of GHG emissions: material production of carbon amendments (transportation of GAC is included in Table B3-2), and engineering controls (e.g., silt curtains) that would be used during dredging and capping to comply with surface-water-related ARARs outside of the work zone. Revise the emissions evaluation to include the missing remedial component data inventory.

242. Page 3, Section 2.2.3 and Table B2-2: The second and third paragraphs of Section 2.2.3 present rationale for not including methane (CH_4) and nitrous oxide (N_2O) emission factors (EFs) in the GHG emissions evaluation. It is unclear how "the contribution of CO_2 to CO_2-eq is at least 50 times greater than the collective contribution of N_2O and CH_4 for any transport method" per Table B2-2. In addition, the CO_2 EF should not be relabeled as CO_2-eq if the CO_2 emission is the only GHG considered in the evaluation.

In general, Appendix B presents a carbon footprint evaluation using CO_2 EFs only. Remove the rationale for not including N_2O and CH_4 EFs and retitle the analysis "carbon footprint evaluation." If performance of a GHG emission evaluation is preferred, N_2O and CH_4 EFs should be incorporated into the analysis.

243. Page 7, Section 3.4, second paragraph: Revise the emission evaluation to include more recent literature on concrete manufacturing EFs, such as EPA's *Life Cycle Inventory (LCI), Data-Treatment Chemicals, Construction Materials, Transportation, On-Site Equipment, and Other Processes for Use in Spreadsheets for Environmental Footprint Analysis (SEFA)* (2016). This resource can also be used to estimate GHG emissions from carbon amendment production.

244. Page 8, Section 4, second paragraph: "As this summary illustrates, Alternative 3 is expected to result in approximately 25% greater overall emissions than Alternative 2, while Alternative 4 is expected to result in approximately 13% greater overall emissions than Alternative 3."

    On the other hand, using the GHG emission estimates presented in Table B4-1, Alternative 3 is approximately 20% greater in overall emissions than Alternative 2, while Alternative 4 is approximately 12% greater than Alternative 3.

    These two GHG emission evaluation summaries are inconsistent and it is unclear which emission evaluation summary is correct. Revisit the GHG emissions evaluation and update the text and table to accurately summarize the findings of the analysis.

245. Page 8, Section 4, third paragraph: As part of the FS review, EPA would like to capture recommendations to consider the following GSR BMPs during remedial design based on the GHG emissions evaluation findings:

    a. Beneficial use of dredged sediment and treated materials (refer to Table 4-1 of this FS).

    b. Salvage and recycle debris collected during dredging (e.g., metal scrap and construction debris).

    c. Procurement of local vendors and contractors to minimize the transportation carbon footprint, such as transportation of sand, which comprises 17 percent of overall transportation Scope 1 emissions.

    d. Additional GSR BMPs recommendations to consider during remedial design and alternatives evaluation, as applicable:

        i. Selection of the processing facility can consider procurement of a local business and work force.

        ii. For restoration of ecosystem services, refer to EPA's *Ecosystem Services at Contaminated Site Cleanups* (2017).

        iii. Stimulation of the local economy via local contractors and businesses from remedial action activities.

246. Figure B-2-1: The figure does not adequately represent the operational boundary of the GHG emissions evaluation, as it does not reference indirect emission sources from sediment dewatering and ex situ stabilization activities. Update the figure to include all indirect emission sources assessed as part of the GHG emission evaluation.

247. Table B-3-1: The text "amendments with quicklime" in Table B3-1 is unclear. Is "with" supposed to be "and"? Revise the document accordingly.

248. Table B-3-2: Transport Method includes "Barge." Are "waterborne craft" EFs used to quantify emissions for "barge" transportation? Also, are the scow trips included in the GHG emissions evaluation under barge transportation? Revise the document accordingly.

249. Table B-A-1: A spot check of Table B-A-1 was performed and GHG emissions estimates for Total Quantity of Diesel Fuel Used (gal.) appear to be underestimated based on the data inventory provided for Total Duration of Equipment Operation and Assume Fuel Usage Rate. The same comment applies to CO_2 emissions estimates for the Water Treatment System and Tonnage of Quick Lime remedial components. Perform a quality check to address this and other quality-related comments (including missing remedial component data inventory) in Tables B-A-1 through B-A-3.

Appendix C

250. The general cost-estimate notes state that cost estimates were developed in accordance with EPA's *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (2000). The narrative provided in Appendix C provides detail on the assumptions that went into the derivation of the alternative cost estimates. The narrative indicates that there is an understanding of the cost elements needed for each alternative. However, Appendix C only provides cost summary tables and does not provide the cost backup that went into the development of the unit prices. Chapter 6 of the EPA cost-estimating guidance states that "Documentation for the FS should be structured using the following three components: detailed cost backup, cost summary of individual remedial alternatives, comparative cost summary of all remedial alternatives." Chapter 6 of the EPA cost-estimating guidance also includes examples of the types of detailed cost backup that should be provided in an appendix to an FS report. The cost backup is needed to review the application of the assumptions made in the cost narrative to develop the unit costs. Include cost backup for each alternative, including development of unit rates and quantities for each construction item.

251. The application of markups and their order of application (indirect labor, overhead, profit, general conditions, and performance and payment bond) does not follow EPA cost-estimating guidance. The combination of these markups is approximately 44.1 percent. Contractor indirect markups, overhead, profit, general conditions, and performance payment bond should be included in the unit costs per the guidance, not as markups to the subtotals in the summary costs. Unit costs incorporating markups also facilitates a relative comparison to previous projects with a similar scope. Revise unit cost summaries in accordance with EPA cost-estimating guidance.

252. The presentation and application of markups and lump sum allowances is unclear. Contingency, project management, engineering design, and construction management should be determined from the total cost that includes markups and contingency. Chapter 6 of the EPA guidance provides examples for development and presentation of unit costs and the cost summary. Revise alternative cost summaries in accordance with EPA cost estimating guidance.

253. Section 3.1 states that mobilization was assumed to be 5 percent of the total direct capital cost. Section 3.1 also states that demobilization was assumed to be 5 percent of the total direct capital cost. However, 5 percent of the total direct capital cost is split between mobilization and demobilization. Revise Section 3.1 to state that mobilization or demobilization is 2.5 percent of total direct capital cost if the intention was to split 5 percent of the total direct capital cost. Revise the cost summaries if mobilization and demobilization are both 5 percent of the total direct capital cost.

254. Revise the document to explain how the lump sum cost for engineering design for work near shorelines, included in the cost summary, was developed.

Appendix D

255. General: Address applicable comments made on the main body FFS text in the corresponding portions of Appendix D as needed.

256. General: The PMP will need to include more details, such as sample spatial and temporal density for surface grabs, sediment cores, sediment traps, passive porewater samples, and particulate surface water samples, as well as sampling methodology and media-specific thresholds for evaluating EA success. See related General Comment 3 on IPMs. Revise the PMP to also include an assessment/monitoring for passive porewater in the backfill and underlying sediments, seeps, and erodible shoreline. Without a proper monitoring program, the success of this EA cannot be reliably determined.

257. The PMP should include a systematic (including stratification based on site data) and unbiased sampling of the sediment surface throughout the OU3 (i.e., not solely within RAL exceedance areas) to compare sample results to RALs and evaluate whether the RAO was achieved. The sampling will then also serve as a basis for understanding contaminant distribution, estimating SWACs with a defined level of uncertainty, and permit the derivation of natural recovery rates when the area is resampled. Additionally, if the monitoring plan is intended to test CSM hypotheses, the monitoring plan should be structured to explicitly state and test the hypotheses.

258. Page 2, Section 1.2: The text states that: “Consistent with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidance, the long-term measure of success for the OU3 remedial action is that surface sediment COC concentrations ultimately meet the higher of risk-based goals or long-term equilibrium surface sediment COC concentrations.” Clarify that this will be accomplished through trend analysis of historical data sets and future sampling, demonstrating that a downward trend toward East River concentrations is evident until the OU1 remedy is selected and remedial goals for the entire Study Area (OU1) are selected as indicated in General Comment 4. Table D-1, Page 2 of 2, Objectives column: In addition to the bathymetric survey, shallow cores should be collected at Year 0 to confirm that cap/cover design specifications. Sediment traps should be deployed during Years 0, 1, and 5 and not just as a contingency. Sediment trap data should be used to verify CSM Component 2. Revise the document accordingly.