UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

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MEMORANDUM

SUBJECT: CSTAG Recommendations on Proposed Early Action, East Branch Newtown Creek, Newtown Creek Superfund Site, New York, New York. Milestone 3.

FROM: Karl Gustavson, Chair, on behalf of the Contaminated Sediments Technical Advisory Group (CSTAG), Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency (EPA).

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BACKGROUND

OSWER Directive 9285.6-08, *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites* (February 12, 2002)[1], established the Contaminated Sediments Technical Advisory Group (CSTAG) to "monitor the progress of and provide advice regarding a small number of large, complex, or controversial contaminated sediment Superfund sites," which are known as “Tier 2” sites. CSTAG members are site managers, scientists, and engineers from EPA and the U.S. Army Corps of Engineers (USACE) with expertise in Superfund sediment site characterization, remediation, and decision-making. One purpose of CSTAG is to guide site project managers to appropriately manage their sites throughout the Superfund process in accordance with the 11 risk management principles described in the 2002 OSWER Directive, the 2005 *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (EPA-540-R-05-012)[2], and the 2017 OLEM Directive on Remediating Contaminated Sediments (OLEM Directive 9200.1-130).[3] The Newtown Creek site is a Tier 2 CSTAG site, and the contaminated sediment actions are subject to CSTAG review per CSTAG’s policies and procedures.[4]

This CSTAG review considers milestone 3 (near completion of the draft focused feasibility study) for a proposed early action in the East Branch of Newtown Creek. Previous Newtown Creek CSTAG meetings were held in 2020 (on Operable Unit [OU] 3, a proposed early action) and 2015 (an initial site meeting

[1] Available at: https://semspub.epa.gov/src/document/HQ/174512
[2] Available at: https://semspub.epa.gov/src/document/HQ/174471
[3] Available at: https://semspub.epa.gov/src/document/11/196834
[4] Available at: https://semspub.epa.gov/work/HQ/100003253.pdf

on OU1). CSTAG's written recommendations and the Region's responses are available at the CSTAG website.[5] Prior to and since the 2020 Newtown Creek meeting, the Region has provided CSTAG with informational updates on site progress and decisions.

BRIEF DESCRIPTION OF THE SITE

Newtown Creek is 3.8 miles long and includes five short tributaries, including the East Branch. It forms part of the boundary between Brooklyn and Queens in New York City. Except for the wider turning basin, the typical width is 200 to 300 feet, and the waterbody has a tidal range of five to six feet. Much of the shoreline is bulk-headed or rip-rapped.

Since the 1800s, the Newtown Creek Superfund Site has been industrially developed. Industrial wastes were typically discharged directly to Newtown Creek and its tributaries without treatment in the nineteenth century and early to mid-twentieth century, and spills and releases of various contaminants on upland properties seeped into Newtown Creek and its tributaries. One of the largest oil spills in the United States was discovered in the 1970s immediately upland of Newtown Creek and is believed to have leaked between 17 and 30 million gallons of oil and petroleum products over more than 50 years. In addition, New York City (NYC) began dumping raw sewage directly into the creek in 1856. Several state-sponsored cleanups have taken place and/or are underway at properties in the upland areas of the Site.

In September 2010, Newtown Creek was listed on the National Priorities List. In July 2011, EPA signed an administrative order on consent (AOC) for the remedial investigation (RI) and feasibility study (FS) of the sediments and waters of Newtown Creek and its tributaries with six potentially responsible parties (PRPs). The respondents to the AOC are NYC and five individual members of the Newtown Creek Group (NCG): ExxonMobil, Phelps Dodge, Texaco, BP, and National Grid. The NCG is conducting the RI/FS activities under EPA oversight. USEPA has approved the baseline human health risk assessment (2017), the baseline ecological risk assessment (2018), and the remedial investigation report (2023).

The primary contaminants of concern (COCs) are polychlorinated biphenyls (PCBs), hydrocarbons (total polycyclic aromatic hydrocarbons [PAHs] and C19-C36 aliphatic hydrocarbons), metals (lead and copper), and dioxins/furans. These contaminants are found in surface sediments, subsurface sediments, porewater, the water column, biota tissue, and underlying groundwater. In-creek processes affecting contaminant fate and transport include sediment resuspension, propwash, NAPL (non-aqueous phase liquid) migration and dissolution, gas ebullition, and groundwater discharge. Mixing of newly deposited sediment with existing sediment is variable throughout the creek and is influenced by these in-creek processes. Ongoing external inputs to the creek include tidal flows from the East River, point source discharges, overland stormwater flow, and other sources. Contaminant concentrations in sediment are generally higher in the Turning Basin and the tributaries, and lower in the main channel of Newtown Creek, especially near the mouth. The baseline human health risk assessment found unacceptable risks associated with ingestion of fish and crab from the creek. The baseline ecological risk assessment found that the study area sediment, particularly in the Turning Basin and most of the tributaries, is toxic to benthic invertebrates and presents exposure risks for bivalves, blue crabs, fish and birds.

[5] https://www.epa.gov/superfund/large-sediment-sites-tiers-1-2

Operable Unit (OU) 1 includes the entire study area as defined in the 2011 AOC. OU2 relates to current and reasonably anticipated future releases of CERCLA hazardous substances from combined sewer overflow (CSO) discharges to the study area. The East Branch early action is part of the OU1 study area.

SITE REVIEW

The site review was held July 11-13, 2023, in New York City and included a site tour, material review, and discussions with Region 2, the Newtown Creek Community Advisory Group (CAG), New York State Department of Conservation (NYSDEC), the NCG, and NYC. The EPA Region 2 project team submitted a site information package to CSTAG that included a summary of the remedial alternatives for East Branch, a CSTAG milestone 3 consultation memo that explained how the eleven principles and sediment guidances were considered, an overview of Newtown Creek site actions, a Remedial Action Objective (RAO) and Preliminary Remediation Goal (PRG) development framework, and portions of the recently approved RI. Written comments were also received from the PRP groups, the U.S. Army Corps of Engineers, and the National Oceanic and Atmospheric Administration (NOAA). The draft Focused Feasibility Study (FFS), which was prepared by the NCG, became available following the meeting and was provided to CSTAG. At the time of writing, the FFS was still under review by Region 2 and comments not yet provided to the NCG.

RECOMMENDATIONS

1. Early actions and site strategy

EPA is proposing an early action in the 11-acre East Branch (EB) tributary of the Newtown Creek Superfund site. The EB is near the head of Newtown Creek and off the main flow path which lessens potential recontamination from adjacent sediments (although sediments can transport up into EB during high tide). Like much of Newtown Creek, the EB is complicated by the presence of an authorized navigation channel, stormwater and CSO outfalls, other ongoing sources, infrastructure maintenance (e.g., bridge replacement), presence of NAPL, and bulkheaded shoreline in disrepair. The Region proposes conducting remedial action in this tributary while the OU1 sitewide feasibility study is being completed. The provided rationale includes expediting cleanup, significant contaminant mass and exposure reduction in the early action area, and gaining experience and knowledge to inform the conceptual site model (CSM) and future work in the Creek. The Region's early action framework includes pre- and post-action monitoring to identify underestimated or missed sources and to identify and address short and long-term performance issues. The process provides reasonable assurance that site characterization or remedy performance shortcomings will be understood and addressed.

The Region, CSTAG, and site stakeholders have long advocated for early efforts to expedite cleanup and efficiently reduce risk. CSTAG agrees that EB is a good opportunity for early action and particularly to develop experience managing challenges in place throughout Newtown Creek. Getting to early and efficient cleanup in the EB will be difficult due to site characteristics, but also the administrative challenges inherent to balancing multiple stakeholder perspectives and developing multi-party agreements under Superfund. CSTAG is optimistic that EPA and stakeholders can align within this relatively small area of the larger site to achieve "early" action and provide an example of how to use early actions to expedite sitewide cleanup.

2. Shoreline NAPL seeps

CSTAG notes a variety of perspectives on whether shoreline seeps (specifically NAPL seeps) are a substantial ongoing external source of contamination to Newtown Creek. The NAPL shoreline seeps have been investigated by multiple parties that appear to have drawn different conclusions regarding the presence and significance of this source. During the review, presentations by NYSDEC (the state regulatory authority) and NYC (a PRP) included information on shoreline NAPL seeps in the EB and in other areas of Newtown Creek. A "long-term equilibrium" (LTE) model (developed by the NCG and currently under review by EPA) was developed to estimate the impact of uncontrolled COC sources, including NAPL seeps, following remediation. The model estimates the LTE sediment COC concentrations in reaches of Newtown Creek based on estimated COC loading from several types of uncontrolled sources. In this model, shoreline NAPL seeps are included under the "lateral groundwater/seeps" input parameter. In the EB, the LTE model does not include loading specifically from NAPL seeps and the draft FFS concludes that "no usable data were available for seeps directly to East Branch."[6]

Unless the NAPL seeps are obvious and frequent, they are challenging to sample and it is difficult to estimate a loading rate. The COC load may still not be consequential, especially compared to other external sources such as the CSO and stormwater discharges to the EB (East Branch Early Action Overview Memorandum, Figure 22). It's also true that minor surface expressions of NAPL can indicate larger NAPL reservoirs that can be a persistent source and released, for example, if shorelines erode, bulkheads degrade, or overburden is removed. Either way, ongoing external COC sources to the EB, if unidentified or unaddressed, have the potential to recontaminate the early action area and to continue to contribute to future unacceptable risk, limiting the effectiveness of the action.

The Region recognizes the uncertainty associated with the model estimates and post-remediation monitoring is planned as part of the early action to evaluate potential impacts from NAPL seeps or other ongoing sources on the protectiveness of the remedy. Further, the Region states their intent to work with NYSDEC and NYC to identify and address any such ongoing sources as required components of an EPA remedy decision if that information is known at the time of remedy selection or if it becomes known during the design of the remedy. From an 11 Principles perspective, efforts to address significant sources prior to remediation are important to control sources early (principle 1), to develop a CSM that identifies known and suspected sources of contamination (principle 4), and to evaluate the assumptions and uncertainties associated with site characterization (principle 6).

Recommendations

a. CSTAG supports the Region's efforts to continue to evaluate ongoing sources and to consider whether EB upland properties have actionable shoreline NAPL seeps. CSTAG recommends that

[6] In the LTE model being reviewed by the Region, lateral groundwater and NAPL seeps are combined into a single parameter ("lateral groundwater/seeps"). In EB, the estimated COC loading for this parameter is low (even lower than the East River contribution to EB) and estimated from "study area-wide opportunistic seep data": "[t]he annual COC load from lateral groundwater/seeps estimated for the LTE calculation was based on the FS Part 1 opportunistic seep data samples and reach-specific lateral groundwater discharge rates estimated in the RI groundwater investigation. The annual lateral groundwater/seeps loads were calculated by multiplying the Study Area-wide arithmetic average of the opportunistic seep (whole water) concentration data" (Section 3.1.3.2, *Draft Interim Estimates Report*). The report notes that EPA plans to further characterize lateral groundwater discharge to the shoreline of Newtown Creek to update the load estimates used in the LTE evaluation.

the Region work with the NYSDEC to clarify how they intend to share responsibility for evaluating and remediating these potential sources of COCs.

b. CSTAG recommends that the Region clarify the remedial design decision process for assessing whether additional source control or protections, such as sealed bulkheads, will be needed for in-water work. Early action alternatives could include a common element that assumes an evaluation of shoreline NAPL seeps at priority upland properties and costing assumptions that some amount of sealed bulkhead will be required. This collaborative process for identifying and evaluating shoreline seeps may not be as critical in the EB, but it will likely become more important elsewhere in Newtown Creek.

3. RAO refinement

RAOs for the Early Action are provided in the "*East Branch Early Action Overview Memorandum."* The language of the first "exposure-based" RAO reads "Reduce human exposure to fish and crab ingestion risks above protective levels by reducing the concentrations of COCs in contaminated sediment in the East Branch to protective PRGs/RGs." The first part describes the overall goal (reduce human exposure risks), while the second part describes how to achieve the goal (reducing concentration of COCs). Inclusion of the word "contaminated" in the second part restricts potential remedies, as many do not reduce the *concentrations* of COCs in contaminated sediment. For example, dredging only removes contaminated sediment while capping adds clean sediment on top of contaminated sediment; neither reduce the concentration of COCs in the contaminated sediment.

Additionally, the "source control" RAO reads "Reduce migration of site-related Non-aqueous Phase Liquid (NAPL) and other sources within the East Branch to sediment and surface water above levels that are protective for human health and ecological exposure." This RAO might be confusing to stakeholders because, if "site-related" NAPL means only NAPL in the sediments of the creek, then the NAPL is already in the sediments and therefore cannot migrate to the sediments. However, if "site-related" includes "external ongoing [COC] sources," which appeared to be the view of some stakeholders, then migration of upland NAPL (and other external ongoing sources) would be reduced as part of the early action.[7]

Recommendations

CSTAG recommends the Region consider:

a. replacing the phrase "the concentrations of COCs in contaminated sediment" with "the exposure of biota to sediment COCs" in the first exposure-based proposed RAO, and

b. rewording the proposed source control RAO to make clearer the definition of "site-related" and the intent of the remedial action.

[7] EPA's *Early Action Overview Memorandum* clearly states that external sources of contamination to the creek will not be addressed directly by the early action, but shoreline NAPL seeps (the topic of much discussion at the CSTAG meeting) were not specified (or precluded): "[E]xternal sources of contamination include, but are not limited to, stormwater and point source discharges (including, but not limited to, combined sewer overflows, permitted and nonpermitted discharges, and overland flow), and lateral groundwater from upland properties" (p. 3).

4. Interim evaluation measures

The Region proposes using risk-based PRGs in sediment for the interim action in EB and throughout Newtown Creek. EPA and the PRPs have conducted extensive characterization of COC sources to Newtown Creek and the LTE model (the model and its inputs are not yet approved by EPA) was developed to predict the equilibrium COC concentrations in surface sediment following cleanup (i.e., the concentrations expected in surface sediment based on current ongoing sources). For some COCs, the equilibrium concentrations predicted by the LTE model are higher than the risk-based concentrations indicating that, under current conditions, risk-based sediment RGs may not be attained in the short term.[8] However, the Region anticipates that the equilibrium COC concentrations will decline to risk-based PRGs as additional control efforts are implemented.[9] Thus, the risk-based PRGs are used as the EB remediation goals and the LTE model predictions were not memorialized as background-based long-term remediation goals. The Region also anticipates that the LTE model will be updated over time as empirical monitoring data are collected.

It is CSTAG's understanding that these equilibrium concentrations will be used as a metric to evaluate whether site COC concentrations are progressing toward the risk-based PRGs and whether additional source control measures or iterations to the remedy are warranted as part of the adaptive site management plan. The Region has opted to term these values "interim evaluation measures," reflecting that the values will be used to monitor remedy effectiveness in the interim, prior to achieving remediation goals. The values do not replace the interim or final remediation goals[10], so their use does not appear to conflict with Superfund guidances regarding remediation goal development.

During the stakeholder listening session, concerns were expressed regarding the derivation of model inputs, a preference for considering the modeled equilibrium concentrations as "anthropogenic background" for use as a remediation goal, and how these values would be used, especially to require future or additional cleanups.

Recommendation

CSTAG recommends ongoing consultations with stakeholders to distinguish between the proposed risk-based remediation goals and the interim evaluation measures. The interim evaluation measures should be more thoroughly described, including their purpose, how and where they will be applied, the process for updating these measures, and specificity regarding their use in site monitoring and adaptive site management, particularly determining whether and where additional source control is warranted. In the same vein, the Region should also

[8] At the time of writing, EPA is conducting its evaluation of LTE concentrations. Analyses from PRP submittals indicate that LTE concentrations for PCBs, dioxin/furans, and C19-C36 aliphatic hydrocarbons exceed risk-based PRGs (although one PRP submittal indicated that "IPM/IEM cannot be estimated accurately for C19-C36 due to data gaps associated with most sources used to develop this analysis").

[9] The *Framework for the Operable Unit One Remedial Action Objective and Preliminary Remediation Goal Approach* (June 29, 2023) states: "rather than establishing background conditions, as is often done and as is supported by EPA guidance, EPA expects to follow an iterative approach to post-remedy monitoring with the expectation that improvements in water quality and other factors beyond the scope of CERCLA will allow the risk-based PRGs to be achieved in the future."

[10] There is some ambiguity in the intent of the action. Although it appears that the risk-based PRGs are considered the remediation goal of the interim action, the Region's RAO/PRG framework states that "Any early action taken will have distinct RAOs and interim performance goals that will work towards achieving the overall site RAOs and interim performance measures," which suggests the remediation goals associated with the interim action are the "interim performance measures."

describe when and at what spatial scale the risk-based remediation goals will be applied to evaluate remedy effectiveness.

5. Alternatives

The sediment bed throughout EB exceeds cleanup levels, and the assembled alternatives address the full 11-acre sediment bed. The remedial alternatives currently under consideration are a combination of dredging and capping with a range of dredge depths and cap areas, except for the no action alternative. CSTAG appreciates the range of alternatives evaluated from no action to maximum removal, including an alternative that accommodates navigation should that be necessary. Further, CSTAG understands one motivation for the early action is to apply lessons from technology implementation in the EB to other areas of Newtown Creek. In particular, CSTAG supports the FFS option to evaluate NAPL treatment with ISS (relative to amended capping). This approach could be an important remedial component at EB and elsewhere for sequestering NAPL, reducing contaminant flux, and stabilizing sediments.

Besides the administrative and source control issues mentioned above, the site also has characteristics that can be challenging for the long-term effectiveness of remedial actions, including isolation capping. Conditions include steep side slopes; areas of deep sediment deposits with embedded NAPL and high organic carbon content that lead to gas generation and ebullition; the presence of outfalls that can produce scour potential in an otherwise isolated aquatic environment; and a contaminated groundwater CSM that is being refined. These characteristics likely preclude a one-size fits all approach and reflect EPA's 2005 contaminated sediment guidance that "[e]ach site and the various sediment areas within it presents a unique combination of circumstances that should be considered carefully in selecting a comprehensive site-wide cleanup strategy" (p. 7-3). The range of dredging and/or capping, isolation, and treatment components that are described in the alternatives should give the site manager the tools necessary to develop an appropriate combination remedy, based on site conditions and the need for protectiveness and long-term effectiveness. However, site complexities strongly suggest that the ongoing investigations and data collection during pre-design, remedial design, and remedial action will present new information that may have to be accommodated during implementation of the selected remedy.

Recommendation

CSTAG recommends the Region develop the FFS and Record of Decision (ROD) language to maximize flexibility in the face of implementation challenges and new findings such as the need for variation in cap design, bulkhead replacement or other source control/remedy protection measures, additional dredging, in-situ treatment, or in-situ stabilization.

6. Monitoring

One of the challenges of taking early action within a broader contaminated site and in an area impacted by ongoing, external COC sources is differentiating remedy performance (whether the applied technology is performing as expected) from recontamination, and then using these data as context for sitewide RAO monitoring. The Region's documentation recognizes this, stating "A robust performance monitoring plan (PMP) would be implemented to evaluate interim remedy success and determine whether additional remedial action within the EB may be necessary and/or if additional external source control measures are needed to reach RAOs." The Region also states that a goal of the EB early action is

to validate and update the sitewide CSM and support LTE refinement. These varied objectives reflect the importance of the monitoring program to achieving Superfund objectives and consistency with several of the 11 contaminated sediment management principles.

During the development of a monitoring program, it can be challenging to reach agreement on the parameters, timing, and necessity of different monitoring approaches. There are very few specifics in the Region's documentation on monitoring parameters (except to include surface sediments[11]). If capping is part of the selected remedy, CSTAG anticipates that cap performance monitoring activities will be a subset of the overall monitoring effort to establish remedy effectiveness, to refine the CSM, and to reduce uncertainty around some of the transport pathways (e.g., groundwater as a source). To that end, CSTAG reinforces the importance of defining and quantifying (if applicable) the "interim evaluation measures" and how they will be used in these evaluations.

Regarding cap performance monitoring, the proposed alternatives heavily rely on an amended cap at least 36" thick over many portions of the sediment bed, and the Region anticipates a 4-year gap between the Interim ROD for the EB early action and the sitewide ROD. Relative to the common 100-year design lifetime for a cap, four years is quite short and such a thick cap will undoubtedly significantly reduce contaminant flux save catastrophic failure. Furthermore, coring and analyzing cap sediments may not identify contaminant migration into the cap if materials with low sorptive capacity (i.e., sand) are used near the sediment-cap interface. Thus, to help inform the design of the sitewide remedy, the post-implementation monitoring should include methods that can evaluate cap performance shortly after implementation. CSTAG believes vertical profile sampling of porewater COC concentrations to demonstrate chemical isolation of the capped materials can facilitate achieving this goal.

Recommendations

a. CSTAG recommends that specifics on the monitoring program be provided within the FFS and ROD. Monitoring is a central component of the remedy and adaptive site management approach, and the Region presents multiple objectives to be achieved by the monitoring program. While it is recognized that details regarding specific sample sizes and locations may not be known at the time of the ROD, the monitoring objectives, parameters, and design to satisfy those objectives should be provided to the extent possible.

b. CSTAG recommends that the Region incorporate porewater sampling to characterize contaminant transport up through the cap; this will help distinguish contaminants associated with the sediment bed from those from other ongoing sources. In-situ passive porewater sampling methods have been shown to be a powerful tool for monitoring migration of hydrophobic organic contaminants through caps at other Superfund sites and could be an important component of cap performance monitoring.

[11]The "*Framework for the Operable Unit One Remedial Action Objective and Preliminary Remediation Goal Approach*" (June 29, 2023) includes the intent to "Develop a long-term monitoring program that includes at least surface sediment and ongoing inputs to assess the overall remedy effectiveness, including both the performance of the remedy itself within the Study Area and the impact on the protectiveness of the remedy from ongoing sources…"

7. Adaptive site management as a site strategy

Adaptive site management (ASM) can facilitate progress at large sites where site complexity and extended timeframes create uncertainty that complicates the ability to select a final, protective remedy. In the provided materials, the Region describes the use of adaptive management in terms of taking early action, monitoring to evaluate ongoing sources and progress towards remediation goals, and taking action on any remaining sources that need to be addressed. These elements of action, monitoring, evaluation, and adaptation are similar to those described in EPA's 2022 ASM guidance.[12] The elements encompass several phases of work, possibly spanning decades and they may require multiple decision points ranging from sampling and analysis plans to determining criteria and timeframes for addressing missed sources. While the components of ASM are stated, details on the timing and implementation are missing.

Some stakeholders may be reluctant to accept ASM without a plan that describes final goals and provides assurance that cleanup will be managed to attain those goals. Other stakeholders may desire certainty regarding the timeframe and scope of actions to be taken and how subsequent actions will be determined. EPA's ASM guidance describes ASM as a "process to manage risks from contaminated sediment sites where iterations of remediation, monitoring, and progress evaluations are guided by a formalized adaptive management plan that establishes the goals of the project, sets expectations, uses monitoring data to evaluate progress towards those expectations, and adapts the remedy as necessary based on those evaluations." In this way, the ASM plan is clear about the objectives of the remediation, the scope of early action, and how the need for additional actions will be evaluated.

Recommendation

If the Region plans to implement ASM as a cleanup strategy in EB and Newtown Creek, it should develop an ASM plan to formalize the process for early actions to support a final action, in a manner consistent with EPA's ASM Guidance. In particular, that plan could demonstrate how monitoring will be conducted and how remediation goals will be verified (especially those based on surface-weighted average concentrations [SWACs]) within the early action and site-wide areas.

8. Community engagement

CSTAG commends the Region for extensive community involvement efforts. Regular meetings with the CAG have helped its members become well informed about this complex site and for the Region to understand issues of importance to the community (e.g., transportation and temporary bridge closure). This relationship building and information sharing benefits members of the public and lessens the likelihood the project will face opposition and delay. During the CSTAG meeting, the CAG was clear on design elements it would like incorporated in the remedy (e.g., public access, soft shorelines, and CSO modifications for remedy protections) and these represent opportunities for additional engagement and collaboration between EPA, PRPs, and the community.

As the early action progresses, the Region may still face community relations challenges resulting from several issues outlined in this memorandum. For example, based on input received during the stakeholder session, it remains a point of confusion whether the EB action consists exclusively of

[12] Available at: https://semspub.epa.gov/work/HQ/100003040.pdf (also cited in the Region's materials)

contaminated sediments, or if it includes inputs to surface water which may serve as a source of recontamination (e.g., shoreline NAPL seeps). Stakeholders present opposing views on the relative importance of the external ongoing sources and their potential to recontaminate sediment. Relatedly, while the EB CSM shows sources of contamination to the sediment (as well as potential sources of recontamination), it does not show how contaminated sediment is resulting in exposure to biota or people, thereby missing a chance to highlight the primary risk that remediation will seek to address.

Recommendations

CSTAG recommends that the Region work with project stakeholders to clarify points of confusion which are distracting from the primary goals of the early action. The Region should clearly explain the bounds of the early action as it pertains to addressing sediment versus potential ongoing sources of contaminants, as well as what will and will not be accomplished by the early action. Doing so can create a shared vision of what successful implementation will look like. For example, if some sediment recontamination is expected, it is important to set expectations so that the project is not wrongly perceived as a failure, and to reinforce that monitoring and evaluation will be ongoing to ensure that EB and sitewide RAOs are achieved. The Region should better explain how the early action will be connected to implementation of the full OU1 remedy (for example, through the development of a site ASM plan) and provide a clearer explanation for the use of IEMs in the early action.

By refocusing on the primary goals of the project and resolving several ongoing sources of confusion, the Region can better inform the community and enable the early action to be viewed as a success.