

**Benning Road RI/FS Project
Operable Unit 2 (OU2 or Waterside) Focused Feasibility Study
Response to Public Comments**

Serial #	Comment Submitted By	Comment	Response
1	Ayanna Williams	I have reviewed the plan and I want you to spend more money on a more comprehensive (and expensive) waterside clean up proposal, including dredging as many areas as possible.	The preferred remedy (WIA-4) for the Cove is consistent with EPA guidance and scored the best in the feasibility evaluation. This alternative will achieve the remedial action objectives and will comply with all applicable rules and regulations. Please note that the remedies evaluated in the Focused Feasibility Study are for an Early Action focused on the Cove. Additional remedies for the larger waterside area will be evaluated in the future.
2	Janet Phoenix	<p>Schedule of Events Associated with Pepco Waterside/Landside Remediation</p> <p>It is important that residents of the neighborhoods surrounding the Pepco Benning Plant understand the timeline of events that will occur to clean up both the landslide and Anacostia River waterside. It is our understanding that the following events will happen, and we are requesting a clear timeline that could be distributed to all then neighborhoods through their ANC representatives and also through the neighborhood associations for distribution at their meetings. This should include at a minimum:</p> <ol style="list-style-type: none"> 1. Proposed Date for Implementation of Remedy in the Cove 2. Anticipated Date for additional work to identify proposed remedies for the remainder of the Pepco Waterside 3. Anticipated Date for Public Meetings/Comments on proposed remedies for the remainder of the Pepco Waterside 	<ol style="list-style-type: none"> 1. Date for remedy implementation in the Cove (Pepco): OU2 Proposed Plan for the Early Action in the Cove is expected to be finalized by the second quarter of 2025 and an Interim Record of Decision is expected to be issued by DOEE in the fourth quarter of 2025. Following this, Pepco will complete the remedial design and apply for permits to implement the remedy. Under this schedule, implementation of the Cove remedy is expected to begin in the fall of 2026, depending on the issuance of permits. 2. Date for identifying remedies for the remainder of the WIA (Pepco): Remedies for the remainder Pepco’s WIA will be identified and evaluated following completion of the Cove remedy and control of the upstream PCB sources as determined by DOEE. 3. Date for proposed plan for the remainder of WIA and opportunity for public comment/meeting (Pepco): Proposed Plan date for the wider WIA is to be determined in the future. Please see response to item 2 above. 4. Timing for implementation of the early actions defined in the Anacostia River Sediment Project Interim Record of Decision (IROD) (DOEE): DOEE expects to begin construction in the fall of 2025 with the work likely starting in Washington Channel. The Pepco WIA is in ARSP Reach 456. EAA remedy construction in Reach 456 is expected to be completed in the fall of 2026.

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		4. Dates for additional remediation work on areas of the Anacostia River outside of the Pepco Waterside area.	
3	Janet Phoenix	<p>Communication with the Public</p> <p>We would like the additional information that Pepco promised to provide on the proposed remedies, and the meaning of the numerical scores assigned for each criterion to each remedy, be shared not only with CAG but also with ANC representatives and civic association leads for the neighborhoods surrounding the Pepco Benning plant. We would like someone designated to respond to questions that neighborhood representatives may have about the technical documents (Waterside and Landside Reports). A section of CAG meetings could be devoted to going through questions that may have been raised and the responses provided.</p>	<p>Alternatives were rated by evaluating them against five separate criteria, referred to as “Balancing Criteria”, based on USEPA guidance for conducting remedial investigations and feasibility studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These balancing criteria include:</p> <ul style="list-style-type: none"> a) Long-Term Effectiveness and Permanence b) Reduction in Toxicity, Mobility, and Volume c) Short-Term Effectiveness and Potential Impacts d) Implementability e) Cost <p>The scoring of each alternative for each criterion is on a scale of 1 to 5, based on an assessment of the performance of that alternative in comparison to the performance of the other alternatives for the same criterion. See Attachment A for a more detailed description of the scoring methodology.</p>
4	Janet Phoenix	<p>Alteration in Formula Used to Select Remedies</p> <p>We are recommending that the criteria cost receive less weight in calculations to select the proposed remedy. We would like long term effectiveness to receive more weight in calculations to select the proposed remedy for the Cove.</p> <p>We would like information to be shared with the CAG and with ANC representatives and civic association leaders for the neighborhoods surrounding the Pepco Benning plant about the fate of the material to be dredged from the Cove. Doing this would result in WIA-6 being selected as the recommended remedy because it scores higher on long term effectiveness, removes more of the contaminated waste from the Cove and is moderate in its implementability and cost.</p>	<p>1) The comparative evaluation presented in the FFS has been performed in accordance with US EPA’s Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (US EPA, 1988). This guidance does not provide for weighing any of the balancing criteria more heavily than others in the overall evaluation, and doing so would distort the balancing process required by the EPA guidance. The NCP requires an assessment of overall cost-effectiveness based on the relationship between cost and risk reduction. 40 CFR § 300.430(f)(1)(ii)(D). In this case, alternatives other than WIA-4 do not provide meaningfully greater risk reduction to justify the additional cost.</p> <p>2) Any sediment dredged from the Cove will be managed in a manner that is protective of the surrounding community and the environment. Dredged sediments will be managed consistent with applicable District regulation and guidance, including transport by trucks to an approved landfill facility for final</p>

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			disposal or potential off-site beneficial reuse. Also see Response above to item 1 under Comment #4.
5	Janet Phoenix	<p>Disposition of the Waste from Dredging Activities</p> <p>We are recommending that there be requirements placed on any bids and contracts related to the disposal of dredge waste from the Cove. We would like to ensure that the waste is made safe before being transported to another community for placement in a landfill or incinerator. We do not want another community to be burdened by hazardous substances from our community.</p>	<p>Pepco maintains a list of pre-approved disposal facilities that meet all regulatory and Pepco requirements. Pepco frequently audits these facilities to ensure that the operations meet the required standards.</p> <p>Dredged sediments from the Cove will be dewatered and stabilized so that the material can be safely transported by trucks to an approved landfill facility for final disposal or potential off-site beneficial reuse.</p>
6	Janet Phoenix	<p>Flooding</p> <p>We would like more information about potential increased flooding that might result from placing caps in the Cove to be shared with the CAG and with ANC representatives and civic association leaders for the neighborhoods surrounding the Pepco Benning plant.</p>	<p>There would not be any substantial change in the elevation of the surface of the Cove from implementation of the recommended alternative (WIA-4). As a result, no potential for increased flooding risks is anticipated from implementation of the remedy.</p>
7	Trey Sherard	<p>Fish Consumption</p> <p>a) The fish consumption estimates for the BHHRA were too low to protect subsistence anglers known to fish near the WIA upstream and downstream. This is the population that needs protection and with the fish consumption advisory aimed at people who choose to eat fish, rather than those who must eat fish to have a protein source, that advisory can not be considered an effective institutional control for this site's toxic impacts on human health.</p> <p>b) Where can the public see the Maryland nontidal Anacostia fish tissue results? It's referenced from this document to the BHHRA which itself seemed to reference other sources, making it nearly impossible for the general public to see the results being referenced. On page 2-9 the report says "The</p>	<p>a) Fish Consumption Rate. A fish consumption rate (also referred to as the fish ingestion rate or FIR) of 20 grams/day was used in the Pepco WIA BHHRA which is representative of the recreational angler and is based on an angler survey for the Chesapeake Bay. The WIA BHHRA was performed in 2019 and, therefore, predates the ARSP IROD which was published in September 2020. The IROD covers the tidal Anacostia River Main Stem, including the WIA. The primary remedial action objective for the IROD is to reduce risks associated with the consumption of COCs in fish from the river by people with the highest potential exposure and is, therefore, protective of the subsistence angler. Since it is protective of the subsistence angler, the ARSP BHHRA assumed an FIR of 65 grams/day (over three times the FIR assumed for the WIA BHHRA). The ARSP FIR was chosen after multiple rounds of public stakeholder review and comment on draft versions of the ARSP RI Report and HHRA (please see the IROD Response Summary for additional discussion of the rationale for selecting the IROD FIR). The IROD targets remediation areas with the highest</p>

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		<p>BHHRA also evaluated fish tissue collected from the upstream non-tidal Anacostia River” in MD. Where exactly is this? The Anacostia River is tidal for its entire length.</p> <p>c) 10E-6 is the correct cancer risk level to use, keep to it or something more protective.</p> <p>d) Knowing that subsistence anglers are not starting from zero exposure, their risk from exposure to toxins introduced by Pepco must be weighted more heavily to reflect that Pepco’s PCBs can put them at risk of health impacts even if Pepco’s PCBs occur at levels lower than would be expected to create the same risks in people starting with 0 PCB body load. It must also be acknowledged that PCBs from Pepco’s operations here may well be a significant portion of those anglers body load from before this study was completed. Further, it is likely that some of those subsistence anglers also carry body loads of toxins from the Pepco Benning Rd plant’s century of air pollution in neighboring communities, a fact that does not seem to be addressed with regards to cumulative harms in the risk analysis.</p> <p>e) In the discussion of risks, where is the discussion of lifelong learning and behavioral disability in children born to women who consume PCB contaminated fish? How is that risk charted for this site?</p>	<p>PCB concentrations. The Cove is not directly addressed in the IROD remedy since the Pepco Benning Road site (and adjacent WIA) is being cleaned up under a separate agreement. However, Pepco designed the Cove cleanup (remedial action level [RAL] is defined as 600 ug/kg total PCBs which equals the IROD total PCB RAL) to be consistent with the IROD and the resulting cleanup of the Cove will, therefore, add to the total footprint of the IROD cleanup. The IROD remedy will make critical initial progress toward reducing the risks for fish tissue consumption by subsistence anglers. As part of the overall cleanup of the river, DOEE is also implementing a robust, stakeholder-reviewed baseline/ performance monitoring plan which tracks seven indicator parameters including forage fish and gamefish tissue. DOEE will track progress throughout the Main Stem (including the WIA) on achieving reductions in fish tissue concentrations with each round of performance monitoring. Based on the evaluation these data, DOEE will adaptively manage the remedy to ensure progress continues in achieving risk reduction for all anglers.</p> <p>b) The fish tissue data were collected by DOEE in 2016 from the upper reaches of the Anacostia River, which is referred to as upstream non-tidal in the Riverwide RI (<i>TetraTech, 2019, Final Remedial Investigation Report. Anacostia River Sediment Project. Prepared for DOEE. December.</i>) Figure 4-17 of the Riverwide RI shows the locations for the upstream non-tidal fish samples and the analytical results are presented in Appendix A (TetraTech 2019). Attachment A-5 of Pepco’s BHHRA also presents the analytical results for the upstream non-tidal fish tissue samples.</p> <p>c) Selection of the 1E-05 Cancer Risk (DOEE). Pepco selected 1E-05 as the target cancer risk threshold for the Cove cleanup action to be consistent with the 1E-05 cancer risk level selected for the ARSP IROD remedy. DOEE selected 1E-05 as the target risk for the ARSP during the FS, vetted this risk level with stakeholders in stakeholder meetings and in the Proposed Plan, and justified this selected level in the IROD (please see the IROD responsiveness section for additional information). The 1E-05 risk level is the midpoint of the 1E-04 – 1E-06 acceptable risk range defined in the National Contingency Plan.</p>

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			<p>Initially, the FS considered using the low end of target risk range; however, preliminary analyses indicated that the associated sediment cleanup level required to achieve the 1E-06 (6.96 µg/kg for PCBs) was less than the PCB background threshold value of 17 µg/kg. EPA recommends not establishing remedial cleanup goals below background levels. Remediating to the background concentration was found to be cost prohibitive.</p> <p>d) The BHHRA for the WIA was performed in accordance with USEPA guidance for conducting baseline risk assessments and work plans approved by DOEE during the Remedial Investigation phase. This included evaluating the risks to recreational and subsistence anglers who may consume fish from the Anacostia River and other regional water bodies. The risk assessment assumed that the anglers' exposure to contaminants occurs over a lifetime of consuming fish. The BHHRA results, which are supported by DOEE's Riverwide RI, indicated a regional impact on fish tissue body burdens that may be attributable at least in part to sources other than sediment within the Upper Anacostia River reach or the Waterside Investigation Area. Many of the fish species are wide ranging and there is no evidence that would indicate PCBs in fish tissue are attributable to Pepco.</p> <p>e) The toxicity factors used in the evaluation of the potential risks posed by PCBs were developed by USEPA to be protective of potential developmental effects and include safety factors that account for potentially sensitive subgroups. They were derived to be protective of potential adverse effects over a lifetime of exposure.</p>
8	Trey Sherard	<p>Outfall 101</p> <p>This comment was deferred from our comments on the Landside OU to the Waterside OU so please find it again here.</p> <p>ARK submitted a notice of intent to sue Pepco over significant metals contamination in stormwater outflows to the Anacostia River from this site via Outfall 013. While those violation were settled between the federal government and Pepco with ARK</p>	<p>The OU2 FFS focuses on the Cove, which is part of the wider Waterside Investigation Area (WIA). Outfall 101 is downstream of the Cove and does not discharge directly to the Cove. Concentrations of PCBs in sediments around Outfall 101 are below the Interim RAL of 600 ug/kg. For the above reasons, any potential impact of Outfall 101 on the Cove is not addressed in this FFS, but will be addressed in the FS for the wider WIA outside of the Cove following implementation of the Cove remedy.</p>

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		<p>engaged, the FS itself mentions that historical sampling there has documented “[PCB] concentrations ... above the National Recommended Water Quality Criteria for aquatic life (14ng/L) and for human health from fish tissue consumption (0.064 ng/L).” The remaining FS language about Outfall 101 includes many relative statements about Outfall 101’s drainage and flow compared to Outfall 013, but does not describe conclusively why Outfall 101 is not better addressed in the FS. “Lower contribution than Outfall 013” is not the same as “no risk”</p>	
9	Trey Sherard	<p>PFAS</p> <p>How have the PFAS analyses of samples from the ARSP influenced this study so far and how may they influence the design before completion? As an example, Maryland has recently issued much stricter fish consumption restrictions for PFAS than the pre-existing restrictions based on PCBs in the same waterways. Where and how have PFAS been used on this site by Pepco and what testing has been done for them here?</p>	<p>There is no information to indicate that any PFAS compounds were ever released at the Benning Road facility or discharged from the Benning Road Facility to the Anacostia River. Accordingly, PFAS were not among the contaminants of potential concern evaluated in the Remedial Investigation.</p>
10	Trey Sherard	<p>Weighing Evaluation Criteria and other Scoring Issues</p> <p>a) Cost Effectiveness for the polluter who profited by not addressing this pollution, and who has dragged this RI/FS out to more than double its original agreed upon length, should not be weighed equally with the Reduction in Toxicity, Mobility, and Volume, or with Effectiveness and Permanence in both the short and long term views. Cost should be weighted much less heavily than the other criteria.</p> <p>b) Implementability and Effectiveness scoring are thoroughly flawed in this study, with a clear bias towards cheaper options for the polluter. Given the agreement shaping up between DOEE and NPS regarding a sediment laydown area for the</p>	<p>a) The comparative evaluation presented in the FFS has been performed in accordance with US EPA’s Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (US EPA, 1988). See Attachment A for a more detailed description of the scoring methodology. See also the response to Comment #4.</p> <p>b) The evaluation of implementability and short-term effectiveness in the FFS is based on currently available information and thus did not consider any proposed or pending agreements between DOEE and NPS regarding sediment laydown areas. Even if Pepco were allowed to use the NPS property for sediment and equipment laydown purposes, dredged sediment would still need to be transported from the site to a landfill for disposal or potential off-site beneficial reuse. This would not substantially reduce any of the short-term effectiveness concerns.</p>

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		ARSP on the NPS Kenilworth Maintenance property, most if not all concerns raised here about greenhouse gases (but nevermind the greenhouses produced over the century of burning coal and oil here), traffic, noise, additional space needed for more dredged material, etc should be eliminated or significantly reduced. This would increase these scores for WIA-5 and WIA-6.	Availability and suitability of the adjacent NPS property for equipment and material laydown purposes will be evaluated during the remedial design phase.
11	Trey Sherard	<p>Final Recommendation</p> <p>WIA-6 with an exception for dredging for areas currently hosting emergent and high marsh plants. Pepco and their contractors should also commit to a complete removal of <i>Phragmites australis</i> in the entire WIA in order to maximize the health of the wetland ecosystem they suddenly care so much for after polluting it for decades. The less capping after dredging, the better, as this entire river is already severely damaged by being too shallow and is, on average, 1 cm shallower every year. That sedimentation rate is expected to increase significantly as climate change drives an increase in storm severity. Dredging should be the preferred remedy for its permanence as well as for the need for depth for future flood resilience, navigation, and recreation. The river needs to be deeper to reduce future flooding from more severe storms and caps may prevent that necessary work in the future. This site should be particularly sensitive to reducing future flooding as 90% of the District's currently delineated 100-year flood prone homes are in the Watts Branch subwatershed adjacent to the site. Why is dredging in all remedies limited to only one foot?</p>	<p>The Cove is and has always been outside of the navigation channel and is the target of the proposed Early Action. The preferred remedy (WIA-4) for the Cove is consistent with EPA guidance and scored the best in the feasibility evaluation. This alternative will achieve the remedial action objectives and will comply with all applicable rules and regulations. Additional remedies (including dredging) for the wider waterside area will be evaluated in the future.</p> <p>There is negligible cover of <i>Phragmites australis</i> in the Cove. Depth of tidal fluctuation precludes extensive establishment by this plant species. The dredged areas need to be restored to the same elevation to preserve and/or support the vegetation and ecology of the Cove.</p> <p>Contemporary literature shows that dredging can have severe short term impacts on the environment. More dredging does not always translate to higher benefits. Remedial Action Objectives for the Cove can be achieved by dredging up to 1 ft.</p>
12	Marian Dombroski (AWCAC Vice Chair)	<p>Endorsement</p> <p>We endorse the comments of the Anacostia Riverkeeper.</p>	Noted.

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13	Marian Dombroski (AWCAC Vice Chair)	<p>Significance of cove and adjacent property</p> <p>The cove and adjacent property offer significant opportunities for restoration and recreation. Though characterized and devalued as industrial areas in this and other reports, aquatic life contend otherwise. Many species of birds frequent this area. It is a favorite of beavers. Since the dismantling of the Power Plant Chimney, a naturalistic appearance is returning. The remarkable regeneration of Kingman Island and of Kenilworth Park South from dredge spoils and landfill hint at what this area could become after the completion of dredging operations. Agencies should consider relocating NPS Maintenance Operations to the site of the former Generating Station and constructing amenities for recreation, such as a volunteer center and community boating facility, in its stead. Relocating the ARWT to the PEPCO side of the property and locating a dock parallel to the shore would provide good access to the river for a variety of activities.</p>	Noted.
14	Marian Dombroski (AWCAC Vice Chair)	<p>Wildlife</p> <p>The impact of wildlife on the cove post-remedy must be considered in selection of methods. The canals, which the report noted, were likely developed or are at least used by beavers, presumably as extension canals allowing access from the main stem through the shallow cove to riparian areas. The population of this important species is growing and should be encouraged. Beavers are capable partners in the restoration of the Anacostia. The report did not address the potential impact of beaver activity following completion of the selected Remedial Action.</p>	<p>The channels in the Cove appear to be relic features formed from historical flow patterns and geomorphology, rather than as a result of beaver activity. These channels are visible on aerial photos going as far back as 1963.</p> <p>The preferred alternative includes construction of outfall plunge pools and drainage channels in the Cove, along with armoring of the outfall areas and channels during the restoration phase to prevent erosion of the in-situ treatment amendment.</p> <p>The preferred alternative includes pool, drainage, marsh, and intertidal features that are present in existing conditions and will continue to serve as habitat for wildlife.</p>
15	Marian Dombroski (AWCAC Vice Chair)	<p>PREFERRED ALTERNATIVE: WIA-5 leaving existing native plant material in place; no capping</p>	Dredging of the Cove without subsequent capping will not achieve the remedial action objectives. Availability and suitability of the adjacent NPS property for equipment and material laydown purposes as well as construction means and methods will be evaluated during the remedial design phase.

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		<p>Removal by mechanical dredging - GRAB DREDGING: This is the most precise method of removal, and can be conducted from a tractor operated from the shore. The proximity of the cove to the laydown area identified by NPS makes this method of removal very practical. Dredging need only be conducted from the side of the canal south to the shoreline for complete removal of contaminated soil. The cove need not be drained or dried. This would damage the native plants.</p> <p>Rather than cap the newly dredged cove, a temporary corrugated barrier could be installed to protect the cove from recontamination of adjacent sediments until such time as they can be remediated. The Anacostia Riverwalk Trail should be relocated to the PEPCO side of the site asap. The fact that the recent decision to use the land adjacent to the cove as a laydown area will simplify the project and remove many of the negative aspect of this alternative.</p>	
16	Marian Dombroski (AWCAC Vice Chair)	<p>Aquatic plants</p> <p>Native plant material should not be disturbed. The ability of native aquatic plants to uptake toxics should be explored in the Cove as a means of bioremediation of the sediments underlying the plants. Invasive plants could be removed and underlying soil tested to determine the effectiveness of the plants to up-take toxics. It appears that the canal and beaver activity have created a barrier to the spread of plant material, so could act as stable edge to begin the dredging operation.</p>	<p>The preferred alternative, WIA-4, would have minimal impact on the aquatic vegetation and the mix of native plants is proposed to be retained. Uptake of contaminants of potential concern in the Cove sediments such as PCBs by plants is limited (i.e., phytoremediation) and is unlikely to have any substantial impact on contaminant concentrations in the Cove. For the above reasons, phytoremediation was eliminated as an alternative during the screening process.</p> <p>No evidence of beaver activity in the Cove was reported during the RI-FS field investigations. Also, see response to Comment #14.</p>
17	Marian Dombroski (AWCAC Vice Chair)	<p>Containment and treatment</p> <p>Remediation through capping, sequestration and cover operations would likely be breached by the channeling activity of beavers, so none of these alternatives are a sustainable method of remediation for the Cove. This shallow and</p>	<p>No evidence of beaver activity in the Cove was reported during the RI-FS field investigations. The selected remedy will include appropriate operation and maintenance measures to ensure long term effectiveness and permanence.</p>

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		important cove should be given the opportunity to participate in its own healing.	
18	Marian Dombroski (AWCAC Vice Chair)	<p>Comparison with dredging of marina at Bladensburg Waterfront Park</p> <p>The area we request to be dredged is comparable to the area dredged annually at the marina of the Bladensburg Waterfront Park. The volume of material removed in the hydraulic dredging operation at BWP far exceeds the volume constituting “full removal of contaminated sediments” at PEPCO Cove. In addition to sediment in the order of 6 feet deep, the dredging operation at the Bladensburg Waterfront Park must address the removal of large debris including bicycles, shopping carts, and appliances. It is unlikely that objects of this kind will be found at the PEPCO Cove. Due to shallow water and a relatively small depth of sediment to be removed, grab dredging would be appropriate and less disruptive than pumping or vacuum operations.</p>	The preferred remedy (WIA-4) for the Cove is consistent with EPA guidance and scored the best in the feasibility evaluation. This alternative will achieve the remedial action objectives and will comply with all applicable rules and regulations. Additional remedies (including dredging) for the wider waterside area will be evaluated in the future. Further evaluation of means and methods for remedy construction will be performed during the Remedial Design phase.
19	Marian Dombroski (AWCAC Vice Chair)	<p>Additional locations</p> <p>Dredging along the seawall south of the cove should be coordinated with the Navigational dredging being considered by DDoEE. It should be designed to complement the intended use for OU1 after the site is no longer operating as a lay-down area for ARSP.</p>	We assume that the “dredging along the seawall” referenced in the comment is the dredging (see ARSP remedy design) needed for the remediation contractor to access the NPS Kenilworth Maintenance Yard, which is the expected location for sediment processing and equipment laydown. The NPS Kenilworth Maintenance Yard is not included in the action area for the Pepco OU2 FFS. Details for restoration of this property following the completion of the ARSP interim remedy are currently being developed by DOEE and NPS. Ensuring that the dredging design for remediation contractor access is complementary to the restoration of the property following the completion of the interim remedy construction will be a priority for NPS and DOEE.
20	Marian Dombroski (AWCAC Vice Chair)	<p>Best use of public waterfront</p> <p>Stewards of public land have a responsibility to manage this important site to its best use. In the case of shoreline, significant land such as this must be returned to its natural function. Recreation is an appropriate use, but the purpose of</p>	DOEE agrees that the shoreline must be returned, to the extent possible, to its natural function. The project is a focused early action in the 3.7-acre Cove that will maintain or restore the shorelines to existing conditions.

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		this project must be contribute to the health, resiliency and quality of the Anacostia River.	
21	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Section 2. Site Conditions. 2.4.4 Ecology.</p> <p>This section names species known to exist on the site from the 2014 sampling, 2020 survey, and public bird sightings. In addition, Threatened and Endangered Species should be described in this section. The U.S. Fish and Wildlife Service has an online project review system to identify any trust resources (including federally listed threatened and endangered species) that occur on the site and assess whether a project is likely to adversely affect these resources. The website is frequently updated to provide new species/trust resource information and methods to review projects. Recommend running the iPAC if has not been run in the past two years: https://ipac.ecosphere.fws.gov/</p>	Noted. A preliminary IPaC evaluation would be conducted during the remedial design phase, and measures will be taken to avoid impacts to any listed threatened or endangered species.
22	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Section 2. Site Conditions. 2.4.4 Ecology.</p> <p>Please provide the latin binomials of the maple, oak, and sycamore species present in the area. Please indicate if transect sampling of vegetation and tree species was conducted to determine the dominant species surrounding the cove area.</p>	Latin binomials of the maple, oak, and sycamore species present in the area will be identified in the revised FFS. No transect sampling of vegetation and tree species was conducted to determine the dominant species surrounding the cove area. This will be considered for the remedial design phase.
23	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Section 6.0 Detailed Evaluation of Assembled Alternatives. 6.2.4 Sediment Redeposition Potential.</p> <p>Recommend discussing the possibility of using submerged sedimentation plates to study sedimentation to determine if the area is depositional. The plates are installed, left for some predetermined amount of time, then inspected and sediment accretion is measured. Plates can be left in place longer to measure accretion over time. This field technique also has the potential to address the question of possible recontamination from upstream sources.</p>	This field technique along with sediment traps were used in the treatability study investigations conducted prior to the FFS with limited success. While both the sedimentation traps and mats help provide understanding into the depositional characteristics of the area, the radio-isotope core taken at SED7E during the RI is likely a more reliable basis for estimating long-term sedimentation rates. SED7E has a calculated sedimentation rate of 1.2 cm/yr based on the Cs-137 maximum in the high resolution core. This average deposition rate was calculated over 60 years and is likely lower in recent years as the Cove is expected to be close to reaching dynamic equilibrium conditions.

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24	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Section 6.0 Detailed Evaluation of Assembled Alternatives.</p> <p>If the area is net depositional as is described in the text, would the capping material required be somewhat less than the amount of material that is dredged? That is, if contaminated material is removed and the area is expected to receive new material naturally, could less than the amount dredged be used to cap?</p>	Deposition of sediments in the Cove is not accounted for in the proposed capping. The estimated net deposition rate of 1.2 cm/year in the Cove is not sufficient to attain the cap thickness required for meeting the remedial action objectives within a reasonable timeframe. Although the Cove is net depositional, the 1.2 cm/year is a long-term average and current deposition rate is likely to be lower.				
25	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Table 3-1 Applicable or Relevant and Appropriate Requirements (ARARs).</p> <p>This section must retain the Endangered Species Act as an “Applicable” ARAR. See also comment above regarding iPAC; note that species can be listed at any time, the inclusion of this statute insures their protection.</p> <table border="1" data-bbox="626 857 1387 906"> <tr> <td data-bbox="626 857 774 906">Endangered Species Act</td> <td data-bbox="774 857 935 906">16 USC §§ 1531 – 1544 50 CFR Part 402</td> <td data-bbox="935 857 1150 906">agency actions. Establishes requirements for protection of federally listed threatened and endangered species and their habitat.</td> <td data-bbox="1150 857 1387 906">Not Applicable - No Critical Habitat within work area.</td> </tr> </table>	Endangered Species Act	16 USC §§ 1531 – 1544 50 CFR Part 402	agency actions. Establishes requirements for protection of federally listed threatened and endangered species and their habitat.	Not Applicable - No Critical Habitat within work area.	Table 3-1 will be revised to retain the Endangered Species Act as an ARAR in the revised FFS.
Endangered Species Act	16 USC §§ 1531 – 1544 50 CFR Part 402	agency actions. Establishes requirements for protection of federally listed threatened and endangered species and their habitat.	Not Applicable - No Critical Habitat within work area.				
26	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	<p>Table 3-1 Applicable or Relevant and Appropriate Requirements (ARARs). Include:</p> <p>a. Executive Order 14072 of April 22, 2022 Strengthening the Nation’s Forests, Communities, and Local Economies; and b. Executive Order 13112 – Safeguarding the Nation from the Impacts of Invasive Species – this will be particularly relevant when replanting/restoration of shorelines and wetlands post-remedial action.</p>	Table 3-1 will be revised to include the referenced Executive Orders as TBC in the revised FFS.				
27	Dawn Fulsher (Site Assessment Manager / Life Scientist, Region 3 EPA)	a) EPA agrees with the conclusion of the FS and agrees that Alternative 4 which involves In-Situ Treatment (3.5 acres), and Limited Dredging with Capping (0.2 acres) is likely to meet the cleanup objectives, be protective of human health and the environment, and provide less disturbance to the ecology of	a) Noted. As discussed in Section 6.3.3 of the FS (under “Reduction of Toxicity, Mobility, or Volume Through Treatment”), while studies have noted some impacts on benthic organisms due to the presence of AC (Jonker et al., 2009; Lillicrap et al., 2015; Rämö et al., 2021), these impacts are generally expected to occur at AC concentrations exceeding 5%. Additionally, no significant				

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	Scientist, Region 3 EPA)	<p>the area. EPA has reviewed literature related to comparing the effects of particle size of activated carbon on benthic macroinvertebrates as part of evaluating several of the remedial alternatives proposed in the draft Feasibility Study which involve the use of Activated Carbon (AC) amendments As part of the evaluation EPA reviewed (Rämö et al., 2021), which described their study on benthic macro invertebrates exposed to different sizes of activated carbon to determine the biological effects of particle size. The results of the study appeared to indicate that ingestible PAC had a negative effect on the benthic organisms studied. The authors concluded that small particle ingestible activated carbon appeared to reduce the bioavailability of food ingested with the PAC causing organisms to starve and lose biomass. Additionally, the guts of the benthic organisms which had ingested PAC were examined using electron microscopy and found to have decreased gut lumen and smaller gut microvilli.</p> <p>b) EPA recommends during the Remedial Design evaluating the use of Granular Activated Carbon that is suspended in a matrix of other materials, such as baked clays, as a cap amendment that would be too large for benthic macroinvertebrates to ingest. Please provide clarification regarding the particle size of Sedimite and Aquablock to determine if they meet that criterion.</p>	<p>adverse impacts on survival of <i>L. variegatus</i> were observed in the Treatability Study (AECOM, 2021).</p> <p>b) Granular activated carbon was evaluated as part of the treatability study and was found to be less effective than PAC-containing products. Please see the treatability study available here: TreatabilityStudyReport_08-25-21.pdf</p> <p>Both AquaGate and SediMite use powdered activated carbon.</p>
28	CAG Members	Will the decision on the remedy for the cove apply to the entire waterside cleanup?	No, a follow on FS will evaluate possible remedies for the remaining areas in the Waterside Investigation Area. The current FFS addressed only Early Action in the Cove.
29	CAG Members	When will the additional cleanup of areas of the Anacostia that are in waterside area outside the Cove take place?	Please see the response to Comment #2, Item #4.
30	CAG Members	What will happen to the PCB contaminated waste that is dredged from the cove?	Dredged sediments from the Cove will be dewatered and transported to an approved landfill facility for disposal or for potential off-site beneficial reuse.
31	CAG Members	What steps will be taken to safeguard the community that is receiving the waste?	The specific steps that will be taken to safeguard the community receiving the waste will be defined in the design documents prepared for the remediation.

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			The contractor selected to construct the remedy in the Cove will prepare a Waste Management/ Transportation & Disposal Plan which will detail these steps. DOEE is responsible for reviewing and approving this plan and the other documents supporting the design and this review will include multiple opportunities for stakeholder review and feedback.
32	CAG Members	Can we meet with DOEE Director Jackson to get DOEE's viewpoint on the decision making process?	As requested by CAG Technical Services Committee, DOEE Director Richard Jackson met with CAG members to address concerns raised by CAG on August 19, 2024. In future, as necessary, to ensure that stakeholder feedback is received and considered in the development and implementation of the remedial design, Director Jackson can participate in stakeholder meetings to facilitate interaction with stakeholders.
33	CAG Members	We noticed that cost appeared to have factored heavily into the process and that if cost were removed, Options WIA 4, WIA 5 and WIA 6 were much closer in the rankings. Is it possible to rethink the options decision without cost being taken into consideration?	The comparative evaluation presented in the FFS has been performed in accordance with US EPA's RI/FS guidance, which requires consideration of cost as one of the factors. Removal of any one criterion will distort the balancing evaluation intended under the EPA guidance.
34	CAG Members	Where is the money coming from for the remediation of the Cove?	Pepco will be funding the implementation of the remedy.
35	CAG Members	How much money has Pepco set aside to fund remediation of waterside and landside?	Pepco is legally obligated to fund the implementation of the selected remedies for both waterside and landside and will ensure that necessary funding is available.
36	CAG Members	What margins of safety were worked into the estimates?	All cost estimates include a 30% margin of safety as contingency.
37	CAG Members	Have the chemicals that are being used to treat the sediments been used in similar settings? Shallow tidal river like the Anacostia?	Yes, activated carbon-based products have been used at similar sites within the US. Please see Attachment B for additional details of sites where these products have been used.
38	CAG Members	What is the predicted lifetime of the treatments?	All alternatives which have been evaluated in Section 7 of the FS are predicted to be effective for a minimum of 100 years based on conservative modeling assumptions. Long-term monitoring is included under each alternative and will be conducted to ensure that the performance criterion is being met.
39	CAG Members	What is the predicted lifetime of the caps?	See response to Comment #38. The long-term monitoring program will also include cap inspections and repairs where needed to maintain the cap integrity.
40	CAG Members	What happens if treatments and/or caps deteriorate in 10 to 15 years?	All alternatives include repair/maintenance activities which are expected to be needed every few years. These would be based on results of the long-term monitoring program. For in-situ treatment, the AC amendment can be re-

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			applied or replenished where necessary. Replenishment of the AC is included under the periodic costs for this alternative. Cap repair/maintenance is also included under alternatives with a capping component.
41	CAG Members	What will happen to the vegetation and sediment after treatment and/or capping?	In the case of in-situ treatment which is the preferred alternative (WIA-4), minimal disturbance to the vegetation is anticipated, except in a small portion of the Cove (0.2 acres) where sediments would be dredged. Dredged sediments would be dewatered and stabilized to prepare them for transportation and disposal at an off-site facility. Primary restoration and wetland mitigation would be conducted as part of the remedy implementation.
42	CAG Members	Has the progressive loss of depth in the Anacostia (approximately ½ per year) been taken into account as these scenarios were developed?	Yes, the loss of depth in the Anacostia and the Cove is accounted for in the most recently conducted bathymetric survey, which was used for developing and evaluating alternatives in the FFS.
43	CAG Members	We are told that capping will make the river more shallow. What impact will this have on the existing wetlands?	<p>All retained options for the Cove with capping include dredging prior to placement of cap. As a result, no substantial changes in the elevation of the Cove are expected.</p> <p>The preferred remedy (WIA-4) will not substantially change the elevation of the surface of the Cove and thus, no potential for increased flood risk is expected from the implementation of this remedy.</p>
44	CAG Members	The AECOMM/PEPCO recommended Option 4 leaves much of the contaminated sediments in place. Doesn't this make more work for consultants who will have to monitor and/or retreat in a few years?	<p>The preferred remedy (WIA-4) for the Cove is consistent with EPA guidance and scored the best in the feasibility evaluation. This alternative will achieve the remedial action objectives and will comply with all applicable rules and regulations.</p> <p>Long term monitoring would be needed for all alternatives, even in the case of dredging and capping, to ensure that the remedy is performing as expected. Similarly, repair and maintenance of the cap is expected to be needed every few years. Both long term monitoring and repair/maintenance costs are included in the cost estimates for all alternatives.</p>
45	CAG Members	People who live near Watts Branch are most vulnerable to flooding. How will this capping affect them since it will make the river more shallow and potentially aggravate flood risk?	The preferred remedy (WIA-4) will not substantially change the elevation of the surface of the Cove and thus, no potential for increased flood risk is expected from the implementation of this remedy.

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46	CAG Members	What has been the result of the use of EcoSpears in the areas of the Anacostia River where it has been deployed as a remedy?	Preliminary results from Ecospears study indicated up to 48% decrease in PW concentrations in the field. Benning Treatability Study results with activated carbon indicated up to 99% reduction in porewater concentrations.

Attachment A

Basis for Scoring of Remedial Alternatives

Benning Operating Unit 2 (OU2) Focused Feasibility Study (FFS)

1. Remedial Alternatives for OU2

The following remedial alternatives were evaluated in the OU2 FFS for remediation of sediments in the Cove with PCB concentrations exceeding the Remedial Action Level (RAL) of 600 µg/kg:

- **WIA-1:** No Action
- **WIA-3:** Capping (3.5 acres), and Limited Dredging with Capping (0.2 acres)
- **WIA-4:** In-Situ Treatment (3.5 acres) and Limited Dredging with Capping (0.2 acres)
- **WIA-5:** Dredging of the Entire Cove and Capping
- **WIA-6:** In-Situ Treatment (over 2.5 acres) with Dredging and Capping (over 1.2 acres)

2. Evaluation of Balancing Criteria

Alternatives were evaluated against five separate criteria, referred to as “Balancing Criteria”, based on USEPA guidance for conducting remedial investigations and feasibility studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (OSWER Directive 9355.3-01, October 1988). These balancing criteria are:

- Long-Term Effectiveness and Permanence
- Reduction in Toxicity, Mobility, and Volume
- Short-Term Effectiveness and Potential Impacts
- Implementability
- Cost

A score, on a scale of 1 to 5, was assigned to each alternative for a given criterion based on an assessment of the performance of that alternative in comparison to the performance of the other alternatives for the same criterion. For the first four balancing criteria, the scoring was based on professional judgement and experience; for cost, the scoring was based on projected costs specified in the FFS.

2.1. Long-Term Effectiveness and Permanence

The long-term effectiveness aspect of this criterion evaluates the residual risk at the site after Remedial Action Objectives (RAOs) have been met, as well as the adequacy and reliability of controls. The first component assesses residual risk in terms of numerical standards following conclusion of the remedial activities. The second component assesses any containment systems and/or institutional controls, which are implemented as part of the remedy, to determine if they are sufficient to ensure that any exposure to human and environmental receptors is within protective levels.

In general, the long-term effectiveness and permanence criterion assesses the performance of the remedy on a longer time scale, such as years or decades, in terms of (a) its ability to maintain the residual risk at or below the levels specified in the RAOs or performance targets, and (b) the frequency of maintenance and repairs or similar actions that may be required to maintain the performance of the remedy over that timeframe. For example, capping material such as soil or sand may erode with time,

thereby reducing the thickness of the cap and potentially impacting the effectiveness of the cap. Under such conditions, replenishment of the cap material may be required over time. Conversely, remedies such as dredging can be regarded as more permanent than capping as the impacted sediments are removed from the site and need for long-term maintenance is generally low.

The alternatives for OU2 were assessed for this criterion in the FFS based on the following considerations:

- Ability to maintaining porewater concentrations of PCBs below the 0.64 ng/L breakthrough target for 100 years
- Permanence of the remedial actions with regard to:
 - Need for replenishment of the cap or in-situ treatment material due to potential erosion during high flow events
 - Permanent removal of sediments in the 0-1 ft. interval with PCB concentrations exceeding the RAL.

Alternative	Maintaining porewater concentrations of PCBs below the 0.64 ng/L breakthrough target	Permanence of the Remedy	Final Scoring
Explanation of Rating	<i>Higher score indicates better effectiveness</i>	<i>Higher score indicates more permanence</i>	<i>Higher score indicates better long-term effectiveness and permanence</i>
WIA-1	N/A	N/A	N/A
WIA-3	5	3	3
WIA-4	5	3	3
WIA-5	5	5	5
WIA-6	5	4	4

Alternatives WIA-3, WIA-4, WIA-5, and WIA-6 are all expected to maintain concentrations of PCBs in the porewater below the 0.64 ng/L criterion and thus, all alternatives were assigned the highest score (5) on this component. The final scoring reflects the scoring of the alternatives with respect to the permanence component.

2.2. Reduction in Toxicity, Mobility, and Volume

Remedial alternatives for OU2 were assessed for this criterion in the FFS based on the following considerations:

- Reduction in toxicity of PCBs in porewater (i.e., achieving PCB porewater concentrations < 0.64 ng/L).
- Reduction in mobility of PCBs in porewater (through placement of cap, adsorption, or a combination of capping and adsorption)
- Reduction in volume of sediments with PCB concentrations > RAL

Alternative	Reduction in Toxicity	Reduction in Mobility	Reduction in Volume of Sediments with PCBs > RAL	Final Scoring
Explanation of Rating	<i>Higher score indicates more reduction in toxicity achieved</i>	<i>Higher score indicates more reduction in mobility achieved</i>	<i>Higher score indicates more reduction in volume achieved</i>	<i>Higher score indicates higher overall reduction in overall toxicity, mobility, and volume</i>
WIA-1	N/A	N/A	N/A	N/A
WIA-3	5	1	1	2
WIA-4	5	3	1	3
WIA-5	5	4	5	5
WIA-6	5	3	3	4

The final scoring for each alternative in the above table reflects the average of the score for each of the components of the criterion.

2.3. Short-Term Effectiveness and Potential Impacts

Short-term effectiveness includes considerations or impacts arising from construction or implementation phase of the remedy. These considerations include any potential impacts on existing ecology of the site and on the surrounding community, as well as potential impacts on construction workers and other site personnel. Wider impacts such as greenhouse gas emissions can also be considered. Short-term effectiveness also assesses the effectiveness of the remedy in the short-term in achieving the RAOs or performance targets. The timeframe for short-term effectiveness can vary from a few months to a couple of years, depending upon the remedy.

Remedial alternatives for OU2 were assessed for this criterion in the FFS based on the following considerations:

- Potential impacts on ecological habitat of the Cove during construction/implementation of the remedy and the magnitude of impacts.
- Potential impacts on surrounding community during construction/implementation of the remedy and the magnitude of impacts.
- Anticipated time between remedy implementation and achieving the performance target of < 0.64 ng/L total PCBs in porewater.

It should be noted that the score assigned for each of the above components is inversely proportional to the magnitude of impacts and the anticipated time required for achieving the performance target. For example, a score of 1 for potential impacts on ecology and community indicates higher impact, while a score of 5 indicates the lowest impact. Similarly, a score of 5 on anticipated time required for achieving the performance target indicates that the remedy can achieve the targets in a short timeframe following completion of the remedy construction.

Under Alternatives WIA-3 and WIA-5, wetland plant species would need to be removed from the Cove and replanted after the remedy has been installed. Existing benthic community in the Cove would also be temporarily eliminated.

Alternatives WIA-3 and WIA-5 involve removal of approximately 300 and 6300 cubic yards of sediment, respectively, equivalent to 450 tons and 9,450 tons, respectively. In addition, both alternatives would need 6600 cubic yards of clean soil or sand for cap construction, equivalent to nearly 10,000 tons of capping material. These materials would need to be staged off-site and be transported to and away from the site via trucks, thereby contributing to noise, air pollution, and traffic concerns in the surrounding area. Handling of such large material quantities is also likely to lead to some dust generation even when best practices for dust control are adopted.

Alternative WIA-4 can be implemented without substantially disturbing or removing the existing wetlands in the Cove. Impacts on existing benthic community would be significantly lower than those under Alternatives WIA-3 and WIA-5.

Alternative WIA-4 would require substantially lower material quantities, estimated to be between 170 and 600 cubic yards (120 to 600 tons) depending upon the activated carbon (AC) product. While AC materials may still need to be staged off-site, owing to the lower material quantities, far fewer truck trips would be required to transport the material to the site, thereby greatly reducing traffic, noise, and air pollution concerns. For the same reason, dust generation under Alternative WIA-4 is expected to be minimal compared to the other alternatives.

For Alternative WIA-6, impacts on existing wetlands in the Cove would be minimal. However, 1.2 acres of the Cove would be dredged and capped, leading to impacts on the existing benthic community, although these impacts would be limited to a smaller area of the Cove (1.2 acres) as compared to the entire Cove for Alternatives WIA-3 and WIA-5.

Implementation of Alternative WIA-6 would require approximately 3600 cubic yards (5400 tons) of sediments to be dredged, approximately 3070 cubic yards (4610 tons) of capping material, and between 120 to 360 cubic yards (80 to 400 tons) of AC product for in-situ treatment. Similar to Alternatives WIA-3, WIA-4, and WIA-5, these materials would need to be staged off-site and be transported to and away from the site via trucks, thereby contributing to noise, air pollution, and traffic concerns in the surrounding area. Handling of such large material quantities is also likely to lead to some dust generation even when best practices for dust control are adopted. However, due to the lower quantities of materials required for Alternative WIA-6, the short-term impacts on the surrounding community are expected to be intermediate between those from Alternative WIA-5 (highest impact) to Alternative WIA-4 (lowest impact).

Alternative	Potential Impacts on Cove Ecology	Potential Impacts on Surrounding Community	Anticipated Time Between Implementation and Achievement of Performance Targets	Final Scoring
Explanation of Rating	<i>Higher score indicates ecological lower impacts</i>	<i>Higher score indicates community lower impacts</i>	<i>Higher score indicates shorter time for achieving performance targets</i>	<i>Higher score indicates lower impacts and better short-term effectiveness</i>
WIA-1	N/A	N/A	N/A	N/A
WIA-3	2	2	5	3
WIA-4	5	5	3	4
WIA-5	1	1	5	2
WIA-6	3	3	4	3

The final score for each alternative in the above table reflects the average of the score for each of the components of the criterion.

2.4. Implementability

Remedial alternatives for OU2 were assessed for this criterion in the FFS based on the following considerations:

- Ease of implementation based on space requirements and availability of space around the Site
- Impacts of aquatic vegetation
- Ease of obtaining regulatory permits and clearances

Alternatives WIA-3 and WIA-5 involve removal of approximately 300 and 6300 cubic yards of sediment, respectively, equivalent to 450 tons and 9,450 tons, respectively. In addition, both alternatives would need 6600 cubic yards of clean soil or sand for cap construction, equivalent to nearly 10,000 tons of capping material. The space around and within the Cove is insufficient for handling and staging of material in these quantities, thus requiring handling and staging areas to be located a few miles from the site. Under WIA-3 and WIA-5, the wetland plant species would need to be removed from the Cove and replanted after the remedy has been installed. Due to the ecologically sensitive nature of the existing wetland plant species, obtaining permits for implementing WIA-3 and WIA-5 is anticipated to be difficult.

In contrast, in-situ treatment via AC under Alternative WIA-4 would require substantially lower material quantities, estimated to be between 170 and 500 cubic yards (120 to 600 tons) depending upon the AC product. Staging and handling of these significantly lower quantities is anticipated to be much easier than the material quantities under WIA-3 and WIA-5.

For Alternative WIA-6, the implementability considerations are intermediate between those of WIA-4 and WIA-5, with approximately 3600 cubic yards (5400 tons) of sediments being dredged, approximately 3070 cubic yards (4610 tons) of capping material required, and between 120 to 360 cubic yards (80 to 400 tons) of AC product required for in-situ treatment.

Alternative	Ease of Implementation Based on Space Requirements and Constraints	Impacts on Aquatic Vegetation	Ease of Obtaining Regulatory Permits and Clearances	Final Scoring
Explanation of Rating	<i>Higher score indicates that alternative is easier to implement based on space consideration</i>	<i>Higher score indicates lower impact on aquatic vegetation</i>	<i>Higher score indicates that obtaining permits and clearances would be easier</i>	<i>Higher score indicates ease of implementation of alternative</i>
WIA-1	N/A	N/A	N/A	N/A
WIA-3	3	1	2	2
WIA-4	4	4	4	4
WIA-5	1	1	1	1
WIA-6	3	3	3	3

The final rating for each alternative in the above table reflects the average of the score for each of the components of the criterion.

2.5. Cost Effectiveness

Each alternative was assessed for this criterion based on its cost in comparison to the costs for other alternatives. The score for each alternative is inversely proportional to the estimated cost of the alternative, with the alternative with highest cost rated as 1 and alternative with lowest cost rated as 5.

Alternative	Estimated Cost	Normalized Cost With Respect to Lowest Cost Alternative	Final Scoring
Explanation of Rating			<i>Higher score indicates higher cost effectiveness</i>
WIA-1	\$0	N/A	N/A
WIA-3	\$7,340,000	1.19	4
WIA-4	\$6,170,000	1	5
WIA-5	\$12,690,000	2	1
WIA-6	\$8,350,000	1.35	2

Site Name	Location	Treatment	Scale (Pilot / Full / Other)	Link to Journal Article / Report
Pier 7 at Puget Sound Naval Shipyard and Intermediate Maintenance Facility	Bremerton, Washington	AquaGate+PAC	Pilot	Long-Term Monitoring of an In Situ Activated Carbon Treatment to Reduce Polychlorinated Biphenyl Availability in an Active Harbor - Wang - 2022 - Environmental Toxicology and Chemistry - Wiley Online Library
Berry's Creek	East Rutherford, New Jersey	SediMite	Pilot	Persistent reductions in the bioavailability of PCBs at a tidally inundated Phragmites australis marsh amended with activated carbon - Sanders - 2018 - Environmental Toxicology and Chemistry - Wiley Online Library
Greenlandsfjords	Norway	Activated Carbon mixed with clean clay	Pilot	Large-Scale Field Study on Thin-Layer Capping of Marine PCDD/F-Contaminated Sediments in Grenlandfjords, Norway: Physicochemical Effects Environmental Science & Technology (acs.org)