

**COMMENTS ON THE DRAFT “SOURCE CONTROL EARLY ACTION FOCUSED
FEASIBILITY STUDY” ON BEHALF OF THE LOWER PASSAIC RIVER STUDY
AREA COOPERATING PARTIES GROUP**

August 16, 2007

I. INTRODUCTION

These comments on the draft “Source Control Early Action Focused Feasibility Study,” dated June 2007 (draft FFS), are submitted on behalf of the Lower Passaic River Study Area Cooperating Parties Group (CPG). The draft FFS is comprised of some 1,900 pages of reports and appendices. The CPG has been unable to complete a full analysis of the draft FFS in the 60 days EPA has allowed for comments and reserves its right to submit additional comments in due course. Moreover, many of the supporting documents apparently relied upon in the draft FFS have not been made available to the CPG or the public.

The CPG cannot support the conclusions of the draft FFS for four fundamental reasons: (1) the draft FFS is scientifically unsound; (2) the draft FFS is legally indefensible; (3) the draft FFS is misleading to the public; and (4) the draft FFS should undergo independent, external peer review. These fundamental flaws are discussed in greater detail in subsequent sections of these comments.

The draft FFS is scientifically unsound. The draft FFS should not have been issued on the basis of minimal data, at a time when the CPG and EPA have agreed that the CPG will complete the ongoing Remedial Investigation/Feasibility Study (RI/FS) of the LPRSA that is designed to gather adequate data to support remedy selection decisions in a manner consistent with the National Contingency Plan (NCP). Instead, the draft FFS proposes massive, unprecedented remedies based upon the consideration of inadequate data and analyses of questionable validity which, in some cases, is not available for review by the public. Some of the reports upon which the draft FFS relies are also unavailable to the public. The draft FFS alternatives purport to be final remedies for the sediments in the lower eight miles of the LPRSA, even though those sediments, and the sources of contamination to those sediments, have not been characterized adequately to support any of the alternative early actions proposed in the draft FFS. Instead, the draft FFS contemplates a massive program to characterize the site after the remedy selection decision has already been made, which is exactly the opposite of the remedy selection process mandated by the NCP. The projected reduction of risk to human health that might result from the implementation of any of the draft FFS alternatives is minimal, if any, and any potential reduction in risk would be lost after implementation as a result of recontamination from ongoing sources. The draft FFS relies upon a Screening Level Ecological Risk Assessment (SLERA) as the basis for its recommendations for a final remedy, even though a SLERA is grossly inadequate and not intended to be used for such a purpose.

The draft FFS is legally indefensible. As detailed in the CPG’s comments, the draft FFS is inconsistent with the NCP and EPA guidance, as well as the whole concept of the Urban Rivers Restoration Initiative, and its site-specific counterpart, the Passaic River Restoration Initiative, which were meant to be models for a coordinated effort to address degraded urban rivers across the country. The draft FFS is also inconsistent with the Administrative Settlement

Agreement and Order on Consent for Remedial Investigation/Feasibility Study (RI/FS Settlement Agreement), entered into between EPA and the CPG a month before the draft FFS was issued. For these and the other reasons set forth in these comments, the draft FFS is scientifically unsound and legally indefensible.

The draft FFS will mislead the public. Moreover, the draft FFS is misleading to the public. For example, the selection of any of the alternatives in the draft FFS will not result in any “early action” within the public’s understanding of that term. The draft FFS alternatives are unprecedented in scale and cost, especially for what is characterized as an early action. Indeed, the draft FFS alternatives do not meet EPA’s own definition of an early action.

The draft FFS should be peer reviewed. Before the draft FFS and its appendices are considered further, they should undergo independent, external peer review in accordance with standard EPA procedure for such critically important and influential documents.

For these reasons, and as more specifically set forth below, the CPG will not perform or fund any of the active alternatives identified in the draft FFS, if requested by EPA. Instead, the CPG, as part of the normal course of the RI/FS, and in compliance with the NCP, will undertake an evaluation of possible early actions.

II. THE DRAFT FFS IS SCIENTIFICALLY UNSOUND

The NCP requires that remedies be selected to protect human health and the environment. *See* 40 CFR 300.430(a) (“The purpose of the remedy selection process is to implement remedies that eliminate, reduce or control risks to human health and the environment.”). By contrast, the draft FFS alternatives were selected based upon unrealistic and unsupported navigational goals and not for the primary purpose of protecting human health and the environment. Four of the six alternatives considered were driven by navigational considerations. Although the draft FFS identified background conditions as the preliminary remediation goals for remedy selection purposes, those conditions were not used in the remedy selection process. Instead, the alternatives were selected based on their ability to provide navigation on the River. The facts, however, are that the authorized federal navigational channel has not been maintained for decades, and the U.S. Army Corps of Engineers (ACOE) has concluded in the draft FFS that funding to maintain the federal navigational channel in the future is unlikely to be available. Under these circumstances, reliance on the restoration of the federal navigational channel as the basis for selecting remedial alternatives would be arbitrary and capricious and inconsistent with the NCP. Moreover, the draft FFS concludes that all the alternatives achieve the same risk reduction, despite the fact that the estimated costs range from \$900 Million to \$2.3 Billion.

A. The Draft FFS Analysis is Inadequate and Relies Upon Insufficient Data

The draft FFS contains an inadequate analysis of the nine remedy selection criteria required by the NCP. The depth of analysis of the nine criteria should be commensurate with the massive scale of the proposed remedial alternatives, but it is not. *See* 40 CFR 300.430(e)(iii) (“The analysis of alternatives under review shall reflect the scope and complexity of site problems and alternatives being evaluated.”). For example, the draft FFS minimizes the implementation problems associated with the proposed Confined Disposal Facility (CDF) and

ignores the problems associated with materials staging, handling and treatment, including dewatering of the sediments, factors that are necessary to be considered under sound engineering practice. Similarly, the draft FFS fails to give adequate consideration to implementation problems associated with the River's bridges (some of which may no longer be operable), the integrity of bulkheading along the banks of the River, impacts to the foundations for the bridges and other structures in the River and the protection of utilities crossing the River. The CPG understands that the specific details of these considerations are typically optimized in the engineering and design phase. However, they must be factored into the draft FFS at least for the purpose of proceeding with any credible estimation of schedule and cost for the alternatives.

The draft FFS does not accurately estimate or quantify the human health and ecological risks to individuals, the local communities and the environment from implementing the draft FFS alternatives over a six to twelve year timeframe (a timeframe that is in fact likely to be much longer). The draft FFS simply states that all the technologies employed in the draft FFS alternatives are tested and proven in practice, when in fact none of them has ever been used on an environmental project at the scale described in the draft FFS. The draft FFS fails to give adequate consideration to the logistical challenges and daily impacts of implementing a massive dredging and capping remedy over a six to twelve year period in an urban setting, an unprecedented undertaking. The draft FFS is therefore inadequate for any remedial decision-making.

Sufficient data have not been collected to support the empirical analyses and resulting conclusions presented in the draft FFS, contrary to federal guidance on data quality and sufficiency contained in the Uniform Federal Policy on Quality Assurance Project Plans (EPA-505-B-04-900A) (QA Policy) and associated data quality publications. To propose an early action based on an inadequate understanding of the environmental systems under consideration will result in the development and implementation of ineffective remedial actions, with possible adverse environmental and human health impacts. Even though much of the available chemistry data is subject to qualification by both the analytical laboratories and the data validation qualifiers, such that the data may be inaccurate, the raw data packages that would allow the CPG and the public to conduct an independent review of the accuracy of the data are not available to reviewers outside EPA and its consultants. The unavailability of these data packages violates the public participation requirements of both CERCLA and the NCP.

The draft FFS relied upon insufficient data as the basis for its selection of remedial alternatives. The draft FFS considered only three sediment cores to characterize the sediments in the entire lower eight miles of the River (consisting of some 650 acres), and none of the cores was located in the areas designated as the Primary Erosion or Inventory Zones. This is inconsistent with the QA Policy and associated quality guidance documents which specify the need to obtain data that are "representative" of the system under study. In contrast, the Pre-Design Investigation (PDI) described in the draft FFS contemplates gathering hundreds of sediment cores with several thousands of samples in the same area, after the remedy has already been selected. The scope of the proposed PDI is compelling evidence of the inadequacy of the site characterization upon which the draft FFS relies. Thus, EPA proposes to gather data to characterize the site after having already selected a series of alternative remedies, a process that is the reverse of the step-by-step analytical process mandated by the NCP, which requires the site to be adequately characterized first, before remedial alternatives are selected.

B. The Conceptual Site Model is Fatally Flawed and is Inadequate to Support Any Remedy Decision

The Conceptual Site Model (CSM) is also inadequate to support the draft FFS. In the first place, the CSM admits that it is incomplete, listing as missing information such critical items as water quality data, site-specific combined sewer overflow (CSO)/storm sewer outfall (SSO) data, surficial sediment data and sediment stability data. *See* CSM, Table 8.1. USEPA's "Contaminated Sediment Remediation Guidance for Hazardous Waste Sites," OSWER Directive 9355.0-85 (Sediment Guidance) states that a reasonably complete CSM which includes an analysis of sediment stability is essential to the remedy selection process. A comprehensive analysis of sediment stability has not been conducted with respect to the sediments in the lower eight miles of the River. Because of the items missing from the CSM, the CSM is not reasonably complete, does not comply with EPA guidance and is not adequate for making remedy selection decisions. Instead of gathering the data that should have been included in developing the CSM and other parts of the draft FFS, EPA in some cases used inappropriate data in the Empirical Mass Balance Model (EMBM) such as CSO data from the Hackensack River and the Arthur Kill, which was assumed to be representative of the LPRSA, without providing any technical basis for concluding that these values were appropriate for use in the LPRSA. *See* Appendix D, Section 4.18. To select an early action based upon the current LPRSA CSM would be contrary to USEPA's sediment guidance documents. Absent a CSM that includes a complete sediment stability analysis of the lower eight miles, the analysis of the early action alternatives and of the feasibility and implementability of the early action alternatives proposed by the draft FFS is based on flawed presumptions and is unsound. Thus, the draft FFS is deficient for lack of a sufficiently complete CSM.

The modeling conducted by EPA is also inadequate to support the draft FFS. The EMBM used in the draft FFS is not a predictive tool and should not have been used to make the predictions made in the draft FFS. The underlying assumptions of the EMBM used in the draft FFS are highly questionable. For example, the amount of LPRSA sediment resuspension used in the model was selected from one of two solutions that produced widely disparate results, indicating that the resuspension of sediments contributes either 10% or 97% of the solids in the LPRSA and which translates to a sediment mixing layer of either 3 to 4 inches or over 30 inches thick — nearly an order of magnitude difference. *See* Appendix D, Section 5.3.2. Such dramatically different results suggest there is substantial and unacceptable uncertainty in the modeling results, due to the lack of site characterization or a reasonably complete CSM. EPA's contractor has conceded that the EMBM is "one step above observation" (Remedial Options Work Group Meeting, June 27, 2007), yet it was used in the draft FFS as though it could accurately characterize the current condition as well as predict sediment concentrations far into the future. In fact, the EMBM was used, together with highly suspect assumptions, to make unwarranted predictions of future conditions. The EMBM was used as a substitute for the properly developed empirical or predictive models populated with site-specific data EPA should have gathered to characterize the site adequately. Those site-specific data were required by the NCP to be gathered before the draft FFS was prepared. *See* 40 CFR §§ 430(a)(2), (b)(5).

The EMBM is the keystone of the draft FFS remedy selection process, yet as far as the CPG is aware, the EMBM has not been validated or tested by the USEPA's Council of Regulatory Environmental Modeling (CREM) or undergo independent, external peer review.

Validation of the model would have required the use of site specific field data which have not been gathered. Further, the predictions of future (year 2048) LPRSA sediment Chemicals of Potential Concern (COPC) and Chemicals of Potential Ecological Concern (COPEC) concentrations are flawed due to the absence of adequate data and inappropriate assumptions in model formulation. Such unsubstantiated predictions are unacceptable as the basis for the selection of an early action, or for any Operable Unit of the final remedy, at this time or of this magnitude. In fact, both the accumulation of sediments (as evidenced by the decreasing channel depth) and radiodated core data that currently exist suggest that the sediment bed is stable over much of the lower eight miles of the LPRSA, contradicting one of the basic premises of the CSM and EMBM, that there is substantial erosion and resuspension of fine grained sediments in the Area of Focus.

EPA should have conducted a sediment stability analysis before screening potential early action remedial alternatives for the River sediments. *See* Sediment Guidance 2.2. A sediment stability analysis is an essential element of the remedy selection process for contaminated sediments, yet EPA failed to perform such an analysis. Indeed, the draft FFS does not even mention the need to conduct a sediment stability analysis.

Furthermore, as noted earlier, some of the data and studies upon which the draft FFS relies are not available to the public, with the result that no analysis can be conducted by the public of their accuracy or appropriateness for use as part of the decision-making process. Because of the missing data and reports, EPA has failed to fully document its decision-making process. As a result, the CPG and the public are unable to conduct a full analysis of the draft FFS, in violation of the public participation requirements of CERCLA and the NCP. Examples of reports that are relied upon in the draft FFS, but which are not available to the public, are the Environmental Dredging Pilot Study report, the CementLock Treatability Study, the Biogenesis Treatability Study, the CARP model data and CSO data collected by NJDEP in the LPRSA. The CPG has repeatedly requested these and other missing items, but they have not been provided. Other data were provided to the CPG by EPA but in a form that the CPG cannot use. For example, the 2005-2007 RI data collected by EPA does not provide a narrative summary or data characterization report which would allow a third party to review this work. Some of the data relied upon in the draft FFS have not been documented to meet EPA QA/QC criteria. The draft FFS (and its appendices), as presented, do not provide the level of detail and documentation necessary for a third party to independently verify and reconstruct the work that was conducted to support the development of the early action alternatives. Specifically, documents containing factual information, data and analysis of the factual information, and data that may form a basis for the selection of a response action, are required to be included in the Administrative Record. *See* 40 CFR § 300.810(a)(1). Such documents may include verified sampling data, quality control and quality assurance documentation, chain of custody forms, site inspection reports, preliminary assessments and site evaluation reports. These shortcomings render the draft FFS arbitrary and capricious and inconsistent with the requirements of the NCP.

C. The Ecological Risk Assessment Does Not Utilize Accurate or Sufficient Data and Is Merely A Screening Tool that Cannot Be Used For A Remedial Decision

The draft FFS ecological risk assessment is inadequate to support the development of detailed Remedial Action Objectives (RAOs) or the selection of any of the alternatives listed

therein. EPA failed to complete the required eight-step ecological risk assessment analysis presented in EPA's Ecological Risk Assessment Guidance (EPA-540-R-97-006; ERAGS). Absent the information that would have been provided in a complete ecological risk assessment, the draft FFS simply states that the ecological RAO is to "[r]educe the risks to ecological receptors by reducing the concentration of [COPECs] in fish and shellfish." This RAO is so general that essentially any remedial action would meet this objective. Instead of completing an ecological risk assessment in accordance with the ERAGS, the draft FFS improperly relies upon a SLERA, when a baseline ecological risk assessment is required to develop specific RAOs and support final remedy selection decisions such as those proposed in the draft FFS. In the first place, the draft FFS concedes that the ecological risk assessment was a SLERA and not a baseline risk assessment. The use of a SLERA to make final remedy decisions is contrary to the ERAGS. A SLERA is not designed or intended to provide definitive estimates of actual risk or to generate cleanup goals (EPA ECO Update June 2001; EPA 540/F-01/014). Instead, a SLERA is intended to be used to identify COPCs/COPECs, pathways and receptors for further risk analysis and not as the basis for making final remedy selection decisions. *See* Sediment Guidance at 2.3.1. The result of the use of the SLERA is that the draft FFS is based upon a risk assessment predicated on a screening level analysis and not on a calculated site-specific risk. EPA must perform a baseline risk assessment before completing the draft FFS. *See* Sediment Guidance at 2.3.2. The absence of a baseline risk assessment would render any remedy selection based on the draft FFS arbitrary and capricious.

In addition, the presentation of ecological risk reduction is misleading. None of the alternatives proposed by EPA in the draft FFS will result in acceptable levels of ecological risk in the lower Passaic River, because COPECs will continue to enter the LPRSA from ongoing sources (e.g., over the Dundee Dam, from CSOs and SSOs, and/or from Newark Bay as a result of tidal action). Further, a significant portion of the long-term "risk reduction" for several of the target species can be attributable to the natural processes ongoing in the lower Passaic River. Moreover, the risk assessment does not take into account risk resulting from the implementation of the draft FFS alternatives, which can be expected to be significant over the six to twelve year period of construction contemplated for the draft FFS alternatives and even that time estimate is likely grossly inaccurate. Finally, the draft FFS contains no data usability analysis, which is in contravention of the ERAGS and inconsistent with the requirements imposed upon the CPG by the RI/FS Settlement Agreement. This omission alone is a fatal flaw.

The methodology employed in the human health risk assessment is not applicable to a baseline risk assessment and distorts the conclusions reached in the risk assessment. For example, the risk assessment used unsupportable conservative risk assumptions in defining current risk which, although arguably appropriate for a screening level risk assessment, are inappropriate for use in a baseline risk assessment. Thus, for example, instead of using available fish file data, the human health risk assessment used flawed assumptions in its evaluation and assumed that a consumer of fish would subsist by ingesting 40 meals per year of the whole body of a fish, including the heads and entrails, without consideration of any cooking loss or other food preparation that might reduce the ingestion of contaminants. The result of using this unrealistic ingestion scenario is to distort the current risk posed in the River so that the alternatives proposed in the draft FFS can be argued to accomplish significant risk reduction, when in fact that is not the case. Had the current risk been correctly assessed in a baseline risk assessment, the risk reduction resulting from the draft FFS alternatives would in all likelihood

have been minimal. Even with the bias introduced from these unreasonable ingestion assumptions and distorting calculations, the risk to human health from excess cancer would be reduced by the draft FFS alternatives to only marginally acceptable levels at enormous cost. The risk/benefit analysis of the proposed alternatives can only lead to one result, that the potential benefits of the alternatives as proposed are minimal, if any, while the costs are extraordinary in scope. Indeed, the non-cancer hazard indices would not be reduced to acceptable levels by any of the draft FFS alternatives.

Ecological risk would not be reduced to acceptable levels by any of the alternatives presented in the draft FFS, and for several species, the predicted long-term risk reduction is essentially equivalent to that which would be achieved by the no-action alternative. None of the early action alternatives results in “no significant risk of harm” to any ecological receptor within 30 years, or longer, of their construction. *See* Appendix C, Section 9.2.2. As noted earlier, COPECs coming over Dundee Dam are not addressed at all by the draft FFS. Thus, even if there were any risk reduction achieved it would soon be lost due to recontamination by uncontrolled ongoing sources (e.g., over the Dundee Dam, from CSOs and SSOs, and/or from Newark Bay as a result of tidal action). Finally, the draft FFS human health and ecological risk assessments fail to consider the risks resulting from contact with Passaic River surface water that is laden with pathogens from CSOs/SSOs that will not be controlled, or even addressed, by any of the draft FFS alternatives.

An uncertainty analysis, which must include a statement of data usability, is critical to remedy selection, but is not included in the draft FFS. This analysis is necessary to provide risk managers with more information regarding the variability surrounding risk characterization and the implications on decision-making. The Sediment Guidance states that with respect to complex sediment sites, like the LPRSA, “there may be a high degree of uncertainty about the predicted effectiveness of various remedial alternatives.” Where this is the case, it is especially important to identify and factor that uncertainty into site decisions. Project managers are encouraged to “consider a range of probable effectiveness scenarios that includes both optimistic and non-ideal site conditions and remedy performance.” *See* Sediment Guidance, Chapter 7. The draft FFS does not contain an adequate uncertainty analysis, nor does the draft FFS contain any data usability analysis. The major elements of the draft FFS analysis are based upon assumptions, predictions and hypotheses that are not supported by empirical data, with the result that cumulative uncertainty and a significant potential for serious errors are present throughout the document. That potential misplaced reliance leads to a significant, unquantified risk that the conclusions in the draft FFS are fundamentally flawed. The decision-makers, the CPG and the public cannot know the probability and effect of significant errors because of the absence of an adequate uncertainty analysis. The absence of an adequate uncertainty analysis and a data usability analysis are fatal flaws in the draft FFS.

The capping and flooding model used in the draft FFS relies upon the LPR/NB Hydrodynamic Model and Sediment Transport Model with SEDZLJ, neither of which has been subjected to (a) credible objective peer review; (b) an assessment of the quality of the data used; (c) corroboration of the model results to empirical data and observations of the modeled system; and (d) sensitivity and uncertainty analyses as required by the CREM. *See* Draft Guidance on the Development, Evaluation, and Application of Regulatory Environmental Models, November 2003. The attendant uncertainty, and potential unreliability of the results, would render any

decision based on these models unsupported. In addition, EPA does not appear to have followed the principles outlined in the Sediment Guidance (Highlight 2-15) in developing the EMBM and Flooding and Capping Modeling. The Sediment Guidance discusses the need to understand and explain the uncertainties associated with site complexity and CSM development and the need to identify data needs to support decision-making and to focus the data collection on data that will most influence the outcome. It calls for considering modeling results in conjunction with empirical results. The entire modeling effort suffers from the lack of sufficient site characterization which results in an incomplete CSM and the need to rely upon unsupported assumptions. As a result, uncertainty pervades the draft FFS from the estimates of risk reduction and time to cleanup to the conceptual design of the active alternatives; yet the significance of the uncertainty and the potential impact on the draft FFS is never discussed.

The draft FFS assumes that all eight miles of the LPRSA, some 650 acres, will be dredged and/or capped, without any consideration of the possibility that a targeted portion of the sediments might be remediated in an early action, contrary to the iterative approach to sediment remedy selection advocated by the Sediment Guidance. In fact, the available bathymetric data suggests that the lower eight miles of the LPRSA are not extensively erosional; to the contrary, there appear to be very limited areas of potential erosion. A sediment stability analysis, which should have been performed as part of the draft FFS, would determine whether more focused, faster and potentially less risky remedial options should be considered. Instead, the draft FFS simply considered the entire sediment bed to be a “source,” when in fact most of it is a sediment sink. This is either an oversimplification or an erroneous conclusion which calls into question any resulting decision based upon the content of the draft FFS.

Because the cumulative effect of these issues is that the draft FFS is scientifically unsound and does not follow good engineering practice, selection of a remedy based on the draft FFS would be arbitrary and capricious and inconsistent with the NCP.

III. THE DRAFT FFS IS LEGALLY INDEFENSIBLE

The Urban River Restoration Initiative (URRI), and its site-specific counterpart, the Passaic River Restoration Initiative (PRRI), both of which EPA has agreed to support, are intended to be a joint, cooperative program to remediate and restore the LPRSA in an orderly and well coordinated approach. The keystone of the PRRI was to have a joint study of the LPRSA, including a CERCLA RI/FS, conducted by EPA, and a WRDA FS, conducted by ACOE. In contravention of the intent of the PRRI, the draft FFS purports to select a “final remedy” for the sediments in the lower eight miles of the LPRSA. The draft FFS is inconsistent with the PRRI and violates the agreements made by EPA to conduct the remediation and restoration of the LPRSA in coordination with the other public and private stakeholders. The draft FFS contains no description of how its proposed alternatives are coordinated with the ACOE feasibility study, or the natural resources damage assessment being conducted by the trustees for natural resources. In failing to describe how those activities will be coordinated with the early final action described in the draft FFS, EPA has failed to abide by its own undertakings and has therefore acted arbitrarily and capriciously.

A. The Draft FFS Conflicts with the RI/FS Settlement Agreement and the CERCLA Remedy Selection Process

The draft FFS is also inconsistent with the RI/FS Settlement Agreement, which became effective on May 8, 2007, little more than one month before the draft FFS was issued. Under the RI/FS Settlement Agreement, EPA and the CPG agreed that the CPG would complete a CERCLA RI/FS of the entire seventeen miles of the LPRSA. The RI/FS Settlement Agreement acknowledged that EPA “is currently evaluating interim remedial measures or interim or final early action alternatives for the LPRSA,” and that “implementation of any such action may result in the need to resequence certain RI/FS field investigation activities [such that] EPA may require [the CPG] to revise Project Plans and/or amend the Project Schedule to reflect the resequencing of RI/FS activities if impacted by the implementation of any interim action.” Contrary to the RI/FS Settlement Agreement, the draft FFS pre-empts the CERCLA RI/FS to the extent that it purports to select a final remedy for the sediments in the lower eight miles of the LPRSA. The FS contemplated by the RI/FS Settlement Agreement for the lower eight miles would be replaced by the draft FFS. That is a far cry from resequencing the RI/FS field investigation activities. Moreover, the draft FFS contains no plan for integrating the draft FFS with whatever remains of the RI/FS described in the RI/FS Settlement Agreement, assuming such integration would be possible.

The draft FFS is inconsistent with the NCP. The draft FFS does not follow the remedy selection process prescribed by the NCP. In the first place, the active remedial alternatives described in the draft FFS do not meet the criteria for an early action under the NCP. The NCP provides that “[s]ites should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup.” 40 CFR § 300.430(a)(ii)(A). The NCP further provides that “[o]perable units, including interim action operable units, should not be inconsistent with nor preclude implementation of the expected final remedy.” 40 CFR § 300.430(a)(ii)(B). The active alternatives described in the draft FFS, by contrast, will not achieve significant risk reduction “quickly” (just the construction of the remedial alternatives is estimated to take from six to twelve years; and the final estimated risk levels will not be achieved for another 40 years beyond that). Even the lengthy time estimates included in the draft FFS are almost certainly unrealistic; for example, it is assumed the CDF can be sited in a timely manner, when in fact, years of regulatory review, appeals, challenges and litigation are likely before the CDF could be sited, assuming it could be done at all.

Nor is phased analysis and response necessary or appropriate, as evidenced by EPA’s willingness, a month before the draft FFS was issued, to enter into the RI/FS Settlement Agreement with the CPG to conduct a comprehensive RI/FS of the whole LPRSA. The draft FFS will not “expedite the completion of total site cleanup” since the RI/FS will still have to be completed and a remedy selected and implemented for the entire seventeen mile LPRSA before total site cleanup can be achieved. The active alternatives listed in the draft FFS will do nothing to accelerate that process. Finally, there is simply no way of knowing whether the draft FFS alternatives will be inconsistent with or preclude implementation of the rest of the final remedial action for the LPRSA, because that final action will not be selected until the NCP-mandated remedy selection process is completed in accordance with the RI/FS Settlement Agreement.

Implementation of the draft FFS alternatives will not, however, mitigate the ongoing releases to the LPRSA (e.g., over the Dundee Dam, from CSOs and SSOs, and/or from Newark Bay as a result of tidal action), which will promptly recontaminate the River; this would certainly be inconsistent with the final remedy for the LPRSA and could require that the draft FFS alternatives, if they were to be implemented, be done all over again.

Second, the NCP requires that a remedial investigation be performed prior to the selection of a final remedy “to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.” 40 CFR § 300.430(d)(1). That was not done; indeed, it is explicitly contemplated to be done under the RI/FS Settlement Agreement. The result of this omission, as detailed above, is that the draft FFS relied on inadequate data to make its remedy selection decisions, particularly a final remedy selection decision. The NCP also requires that a baseline risk assessment be performed to support a final remedy selection decision, using the data collected in the remedial investigation. 40 CFR § 300.430(d)(4). The draft FFS concedes that this was not done; instead, screening level risk assessments were performed and then improperly relied upon for purposes for which they were not intended.

Third, the NCP requires that “[d]evelopment of alternatives shall be fully integrated with the site characterization activities of the remedial investigation described [in the NCP].” *See* 40 CFR § 300.430(e). That was not done. Indeed, the draft FFS was not integrated with the RI/FS at all. Instead, EPA proposes to make a remedy selection decision and then to undertake the site characterization that should have been part, and was indeed part, of the remedial investigation planned under the RI/FS Settlement Agreement. The draft FFS effectively pre-empts the RI/FS by the failure to develop alternatives based on the site characterization.

Fourth, none of the active alternatives should have survived the NCP’s development and screening analysis for remedial alternatives. Since the estimated cost of the active alternatives, which are likely significantly understated in the draft FFS, are “grossly excessive compared to the overall effectiveness of [the] alternatives,” they should have been eliminated from consideration during the screening process. *See* 40 CFR § 300.430(e)(7)(iii). Furthermore, given the enormous scale of each of the active alternatives, the draft FFS fails to provide a sufficiently detailed analysis of the NCP’s nine criteria for evaluating alternatives. *See* 30 CFR § 300.430(e)(9).

B. The Draft FFS is Inconsistent with EPA Guidance and the NAS Report on the Remediation of Sediment Sites

The draft FFS is also inconsistent with EPA guidance. EPA issued its Sediment Guidance in December of 2005, which reiterated and expanded upon its earlier 2002 “Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites,” OSWER Directive 9285.6-08 (Sediment Management Principles). EPA has also prepared a Contaminated Sediment Management Strategy (USEPA 1998) (Sediment Strategy). The draft FFS is not consistent with EPA’s Sediment Guidance, Sediment Management Principles or Sediment Strategy. For example, under the Sediment Management Principles, the LPRSA should have been subjected to the Tier 2 process to be applied to “large, complex, or controversial sediment Superfund sites” and monitored by the Contaminated Sediments Technical Advisory Group (CSTAG), before the

draft FFS was issued, “[t]o help ensure that Regional site managers appropriately consider [the Sediment Management Principles] before site-specific risk management decisions are made....”

EPA’s Sediment Guidance clearly provides that the first step in the remediation of contaminated sediments is characterizing and controlling ongoing sources early, which the draft FFS fails to do. The Sediment Guidance provides that one of the key “risk management principles” is to control sources early (*see* p. 1-5), and the Sediment Guidance provides that “[b]efore initiating any remediation, active or natural, it is important that point and nonpoint sources of contamination be identified and controlled.” *See* Sediment Guidance at p.55. Although the draft FFS purports to address ongoing sources of contamination to the LPRSA by placing the words “source control” in the title, the draft FFS report is wholly devoid of any meaningful discussion relating to either characterizing or controlling many of the ongoing sources to the LPRSA. While there is a general discussion of source control actions above Dundee Dam, there is no program outlined to actually determine the identity, location and extent of the sources and how they will be controlled. Furthermore, CSOs, SSOs, and other point and non-point sources along the River have not been characterized, let alone controlled, and the significant recontamination potential from sediments adjacent to the River, e.g., Newark Bay, is unknown. That is not an insignificant concern; a recent study concluded that one half of the completed sediment remediation projects have experienced recontamination. (Honigman Miller Schwartz and Cohn LLP, “Analysis of Recontamination of Completed Sediment Remedial Projects,” Battelle Fourth International Conference on Remediation of Contaminated Sediments, January 2007). Failure of the draft FFS to characterize and control ongoing sources is contrary to EPA’s own guidance documents and sediment management principles and strategy and will obviate any risk reduction anticipated by the active alternatives.

The draft FFS fails to adequately address the limitations of dredging, as required by the Sediment Guidance. EPA’s Sediment Guidance acknowledges that a “limitation of sediment removal is the level of uncertainty associated with estimating the extent of residual contamination Residual contamination is likely to be greater in the presence of ... buried debris, . . . where more highly contaminated sediment lies near the bottom of the dredge thickness . . . [and] in very shallow waters when dredging sediment with high water content.” Sediment Guidance at 6-3, 6-4. The draft FFS ignores the risks associated with dredging by failing to recognize the likelihood of significant residual contamination due to the known existence of buried debris, including tires and automobiles, in the River. Moreover, environmental dredging has never been conducted at the depths envisioned by the draft FFS and, as previously noted, the correct depth to which the dredging will have to be accomplished cannot be determined because the site-specific data do not exist to support such a determination. In other words, EPA has not collected sufficient data to determine the depth of the contamination in the River sediments.

The draft FFS is also inconsistent with the current scientific consensus on sediment remediation. The National Academy of Sciences Report, “Sediment Management at Superfund Megsites,” June, 2007 (NAS Report) states “a relatively small continuing source may pose a greater risk of exposure and associated injury than a large buried inventory of sediment associated contaminants.” NAS Report at 21. By contrast, EPA has focused on a buried inventory of sediment associated contaminants, but has taken no enforcement action to control or eliminate discharges of hazardous substances from the CSOs, SSOs, and other nonpoint sources

of contamination. Furthermore, the remedial alternatives identified by EPA do not even focus on the areas that have historically been considered contaminant “hot spots.” Thus, the decision to focus on the areas of buried contaminated sediment, while ignoring continuing sources completely, is unsupportable.

The NAS Report further amplifies the need to characterize short-term risk associated with implementation of any of the draft FFS alternatives. “An analysis of alternative remedies typically includes a comparison of both the short- and long-term risks to human and environmental receptors for a particular site. For example, the risks from dredging can include exposure to contaminants during dredging, rehandling, and transport, and contaminants that remain after operations are completed.” NAS Report at 22. As discussed, the draft FFS fails to analyze the risks associated with dredging and fails to recognize the risks of resuspension, handling, transport and residuals that will accompany a dredging program of such massive scale.

The LPRSA exhibits few, if any, of the characteristics that the NAS Report has identified as conducive to a successful dredging remedy. For example, conditions that are more “conducive to dredging and less prone to releasing contaminants” include sites with “little or no debris (for example, . . . cables, automobiles, and I-beams), . . . conditions that allow overdredging into clean material beneath contaminated sediment, . . . low-gradient bottom and side slopes, lack of piers and other structures, rapid natural attenuation processes after dredging, and absence of contaminants that distribute to the water column rapidly after sediment disturbance.” NAS Report at 4. Under this analysis, the known conditions in the LPRSA are clearly not conducive to dredging, but are highly prone to releasing contaminants during dredging. The existing conditions in the River and the associated risks created by dredging are not adequately considered in the draft FFS.

Finally, the draft FFS fails to comply with the Data Quality Act, also known as the Information Quality Act, 44 U.S.C. § 3516 and the guidelines issued by the Office of Management and Budget under the Act, found at 67 Fed. Reg. 8452 (Feb. 22, 2002), under which all federal agencies, including EPA, are to ensure and maximize “the quality, objectivity, utility and integrity of information” which they disseminate and use to support their actions. In this case, EPA has relied upon minimal information, some of which is of questionable validity and some of which has not been made available to the public.

IV. THE DRAFT FFS WILL MISLEAD THE PUBLIC

The EPA Sediment Guidance lists as the first principle in building effective working relationships with communities and other stakeholders at sediment sites, the need to “[c]reate realistic expectations up front for both public involvement and sediment cleanup.” Sediment Guidance at 1.6. By contrast, the draft FFS in its current form is misleading to the public and may create unrealistic expectations. The public will expect an “early action,” when in fact construction of any of the active alternatives presented in the draft FFS will not be completed until from six to twelve years. Even those time estimates are highly likely to be unrealistic and unachievable. And the selected action will not achieve EPA’s estimated risk reduction for an additional *40 years* thereafter. Such periods of time are not what the public will understand to be an “early action.” The estimated times to complete construction of the draft FFS alternatives are also inconsistent with EPA’s own definition of an “early action,” which EPA guidance

provides should take from three to five years to complete, or about half or less the projected construction duration of the draft FFS alternatives. *See* OSWER Directive 9203.1-01. The draft FFS should be revised to make clear to the public how long implementation and projected risk reduction of the draft FFS remedial alternatives will actually take.

The public will be led to believe that the “near shore” CDF can be sited in the time frames predicted in the draft FFS, when in fact, siting such a facility may prove to be impossible. The proposed CDF is central to the success of the draft FFS alternatives; without a CDF, the cost and time predictions of the draft FFS are meaningless, yet the draft FFS contains no discussion of the uncertainty inherent in attempting to site such a massive facility in a heavily populated urban area. The public needs to be informed that this uncertainty may make the draft FFS alternatives impossible to implement. At a minimum, the public should be informed that the siting process will likely be highly contentious and time consuming and may involve litigation which could further delay the process for years.

The public will likely expect that when the draft FFS alternatives are implemented, the lower eight miles of the LPRSA will be fully restored, which will not be the case. To the contrary, institutional controls, such as fish consumption bans, will need to remain in effect for decades after construction of any of the draft FFS alternatives has been completed. Continuing sources of contamination, including impacts from the Passaic River above Dundee Dam and raw sewage, pathogens and hazardous substances discharged by the CSOs and SSOs along the LPRSA, acknowledged to exist in the draft FFS, but unaddressed by the proposed remedial alternatives, will continue to render the LPRSA unsuitable for fish consumption and unsafe for human contact with its waters for the indefinite future. The process of controlling ongoing sources of contamination to the LPRSA may take years or decades to complete. Therefore, despite the words “source control” in the title, the clear lack of actual source control elements in the draft FFS alternatives will be misleading to the public. The public needs to understand these facts, or public expectations will be unreasonably raised.

The draft FFS may lead the public to believe that the EMBM is a valid and appropriate tool for remedy selection and for estimating the time until cleanup goals are achieved, when in fact it is not. The draft FFS suggests that the EMBM is comparable to a numeric, mechanistic model which uses large amounts of site-specific data and algorithms to predict outcomes into the future, when in fact it is not. Similarly, the public will likely read the draft FFS to be based upon an adequate and appropriate risk assessment, when in fact, a human health risk assessment was conducted that used overly conservative and absurd assumptions regarding ingestion of fish and crabs, while only a SLERA was performed that is not intended by EPA’s own guidance to identify cleanup levels. These elements of the draft FFS will seem to the public to be scientifically sound, when in fact, they are not. The public should be clearly informed of the true basis of the draft FFS and the uncertainties inherent in its analysis.

EPA had inadequate data with which to make predictions of the time to implement the draft FFS alternatives, or their potential costs; nevertheless, because of the absence of an adequate uncertainty analysis, the public will be led to believe that the draft FFS estimates are accurate.

Because the draft FFS is fundamentally misleading to the public, selection of a remedy based on the draft FFS would violate the public participation requirements of CERCLA and the NCP. *See* 40 CFR § 300.430(f)(3).

V. THE DRAFT FFS SHOULD UNDERGO PEER REVIEW

The draft FFS is clearly within the class of documents the EPA “Peer Review Handbook” (3d edition, EPA/100/B-06/002), developed by the Peer Review Advisory Group for EPA’s Science Policy Council (Peer Review Handbook), requires undergo independent, external peer review. Many of the appendices to the draft FFS should also undergo independent, external peer review. The Peer Review Handbook provides that “[t]he principle underlying the Peer Review Policy is that all influential scientific or technical work products used in decision-making will be peer reviewed.” Peer Review Handbook at 30 (emphasis in original). Although there cannot be the slightest doubt that the draft FFS and its appendices fit squarely within that standard, the Peer Review Handbook goes on to direct EPA that “[w]hen in doubt about whether a work product merits peer review, decide to peer review it.” Moreover, the draft FFS and its appendices not only meet EPA’s own definition of a document that is “influential,” but also the Office of Management and Budget definition of a “highly influential scientific assessment” requiring peer review. *Id.* at § 2.2.2-2.2.4.

OMB and EPA consider that peer review should be conducted if a document meets any one or more of the following factors: “a) Establishes a significant precedent, model or methodology; b) Likely to have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, Tribal, or Local governments or communities; c) Addresses significant controversial issues; d) Focuses on significant emerging issues; e) Has significant cross-Agency/interagency implications; f) Involves a significant investment of Agency resources; g) Considers an innovative approach for a previously defined problem/process/methodology; h) Satisfies a statutory or other legal mandate for peer review.” *Id.* at § 2.2.3.

Further, the Peer Review Handbook states that peer review should be conducted on information from other agencies or organizations; thus, the Navigation Study, the Environmental Dredging Pilot Study, CARP Data and EMBM should also be peer reviewed. *Id.* at § 2.2.17. The draft FFS and its appendices meet virtually all these factors when only one or more of them justifies peer review under the OMB and EPA policy. The draft FFS and its appendices are highly controversial; their analysis and conclusions are highly suspect and subject to considerable doubt, yet the alternatives proposed in the draft FFS are massive in scale and unprecedented in estimated cost (perhaps as much as \$2.3 billion), especially for an “early action” to be conducted before an NCP RI/FS has been completed. The draft FFS and its appendices are exactly the kind of documents that should undergo independent, external peer review.

Indeed, the RI/FS Settlement Agreement contains a standard for selecting deliverables that should undergo peer review and identifies a list of deliverables that will be required to be

peer reviewed. In paragraph 37(f), the RI/FS Settlement Agreement provides that “EPA will determine on a case-by-case basis which Lower Passaic River Restoration Project Work products should be peer reviewed, in accordance with the principle that all influential scientific and technical work products used in decision-making will be peer reviewed,” including, “[a]t a minimum, the Model Calibration/Validation, Baseline Human Health Risk Assessment and Baseline Ecological Risk Assessment reports shall be peer reviewed.” At a minimum, the counterparts of these enumerated documents which form the basis for decision-making in the draft FFS should be peer reviewed, but the draft FFS itself, as well as all the significant appendices, also fit within the EPA definition of decision-making documents that should be peer reviewed under the RI/FS Settlement Agreement.

The Peer Review Handbook provides that “[a]ll Agency managers are accountable for ensuring that Agency policy and guidance are appropriately applied in determining if their work products are influential or highly influential, and for deciding the nature, scope, and timing of their peer review.” Peer Review Handbook at Appendix A-5. The Handbook concludes that “[f]or highly influential scientific assessments [such as the draft FFS], external peer review is the expected procedure.” Peer Review Handbook at § 3.4.3. Without doubt, the EPA should subject the draft FFS and its appendices to independent, external peer review.

Requiring that RI/FS deliverables undergo peer review, while not subjecting the highly influential draft FFS and its appendices, including the counterparts of the deliverables enumerated in the RI/FS Settlement Agreement, to independent, external peer review, would be arbitrary and capricious.

VI. CONCLUSION

The draft FFS is scientifically unsound and legally indefensible. Accordingly, the CPG, if requested by EPA, will not perform or fund any of the alternatives listed in the draft FFS.

The RI/FS Settlement Agreement was intended to result in an RI/FS of the entire seventeen mile stretch of the Passaic River that constitutes the LPRSA. That RI/FS, in a relatively short period of time, will gather the data that are critical to the development and selection of remedial alternatives, including early action alternatives.

Although the CPG cannot support the conclusions reached in the draft FFS, the CPG, as part of the normal course of the RI/FS, and in compliance with the NCP, will undertake an evaluation of possible early actions. The CPG stands ready to continue to implement the RI/FS required by the RI/FS Settlement Agreement, and especially to develop those candidate early actions in the process, assuming that effort is not essentially nullified by implementation of the approach suggested in the draft FFS.

Before the draft FFS is considered further, the draft FFS and its appendices should undergo independent, external peer review in accordance with the Peer Review Handbook. Because of the importance of independent, external peer review to the integrity of the project, the CPG is prepared to consider funding the reasonable costs of such a peer review conducted by an independent third party, such as the National Research Council of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.