FINAL
FEASIBILITY STUDY WORK PLAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY, NEWTOWN CREEK

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<td>AOC</td>
<td>Administrative Order on Consent</td>
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<td>ARAR</td>
<td>Applicable or Relevant and Appropriate Requirement</td>
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<tr>
<td>BERA</td>
<td>Baseline Ecological Risk Assessment</td>
</tr>
<tr>
<td>BHHRA</td>
<td>Baseline Human Health Risk Assessment</td>
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<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
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<td>CFR</td>
<td>Code of Federal Regulations</td>
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<td>CSM</td>
<td>Conceptual site model</td>
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<td>CSO</td>
<td>Combined sewer overflow</td>
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<td>CWA</td>
<td>Clean Water Act</td>
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<td>FS</td>
<td>Feasibility Study</td>
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<td>FS Work Plan</td>
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<tr>
<td>geo-neutral</td>
<td>Geographically neutral</td>
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<td>GRA</td>
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<td>Municipal separate storm sewer system</td>
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<td>NCP</td>
<td>National Contingency Plan</td>
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<td>NYCDEP</td>
<td>New York City Department of Environmental Protection</td>
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<td>OLEM</td>
<td>Office of Land and Emergency Management</td>
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<tr>
<td>PCB</td>
<td>Polychlorinated biphenyl</td>
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<tr>
<td>P.E.</td>
<td>Professional Engineer</td>
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<td>PRG</td>
<td>Preliminary remediation goal</td>
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<td>RAO</td>
<td>Remedial Action Objective</td>
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<td>RI</td>
<td>Remedial Investigation</td>
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1 INTRODUCTION

This Feasibility Study Work Plan (FS Work Plan) describes the scope of work that will be implemented to complete the Feasibility Study (FS) for the Newtown Creek Study Area. The FS for the Newtown Creek Study Area is being performed under an Administrative Order on Consent (AOC) entered into with the U.S. Environmental Protection Agency (USEPA). There are six signatories to the AOC, including the five members of the Newtown Creek Group (NCG) and the City of New York. The NCG includes Phelps Dodge Refining Corporation; Texaco, Inc.; BP Products North America Inc.; The Brooklyn Union Gas Company d/b/a National Grid New York; and ExxonMobil Oil Corporation.

The AOC designates that the performance of the work be completed under the administration of a designated project coordinator. This FS Work Plan has been prepared by that project coordinator, Anchor QEA, LLC, who is currently retained by the NCG for the completion of this work.

This FS Work Plan fulfills the deliverable requirement set forth in the Remedial Investigation/Feasibility Study Work Plan (RI/FS Work Plan; AECOM 2011) and is primarily a reiteration of the FS approach provided in that document. This document provides an update to the FS schedule, a framework for developing Remedial Action Objectives (RAOs), and a general update of the path forward for the FS process.

1 The Newtown Creek Superfund Site Study Area is described in the Administrative Order on Consent (AOC) as encompassing the body of water known as Newtown Creek, situated at the border of the boroughs of Brooklyn (Kings County) and Queens (Queens County) in the City of New York and the State of New York, roughly centered at the geographic coordinates of 40° 42’ 54.69” north latitude (40.715192°) and 73° 55’ 50.74” west longitude (-73.930762°), having an approximate 3.8-mile reach, including Newtown Creek proper and its five branches (or tributaries) known respectively as Dutch Kills, Maspeth Creek, Whale Creek, East Branch, and English Kills, as well as the sediments below the water and the water column above the sediments, up to and including the landward edge of the shoreline, and including also any bulkheads or riprap containing the waterbody, except where no bulkhead or riprap exists, then the Study Area shall extend to the ordinary high water mark, as defined in 33 Code of Federal Regulations (CFR) §328(e) and the areal extent of the contamination from such area, but not including upland areas beyond the landward edge of the shoreline (notwithstanding that such upland areas may subsequently be identified as sources of contamination to the waterbody and its sediments or that such upland areas may be included within the scope of the Newtown Creek Superfund Site as listed pursuant to Section 105(a)(8) of Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]).
The RI/FS Work Plan states the following with respect to the FS approach:

*The objective of the FS is to develop and evaluate remedial alternatives and assess whether they will meet the proposed remedial action goals and RAOs for the Study Area. The FS approach includes the steps outlined in the National Contingency Plan as described in Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (USEPA, 1988). It also considers the guidance provided by the Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (USEPA, 2005a) and DER-10, including Technical and Administrative Guidance Memorandum (TAGM) #HWR-90-4030 Selection of Remedial Actions at Hazardous Waste Sites (NYSDEC, 1990) and is consistent with 6 NYCRR Part 375.*

The FS approach will also consider recent guidance—*Remediating Contaminated Sediment Sites – Clarification of Several Key Remedial Investigation/Feasibility Study and Risk Management Recommendations, and Updated Contaminated Sediment Technical Advisory Group Operating Procedures*—issued as a Directive by the USEPA Office of Land and Emergency Management (OLEM; USEPA 2017). The FS will also be conducted in accordance with *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (USEPA 2000), which contains cost-related information that supersedes information described in USEPA’s general Remedial Investigation/Feasibility Study (RI/FS) guidance (1988).

The draft *Remedial Investigation Report* (RI Report; Anchor QEA 2016a), the *Baseline Human Health Risk Assessment* (BHHRA; Anchor QEA 2017a), and the draft *Baseline Ecological Risk Assessment* (BERA; Anchor QEA 2017b) provide the technical basis to support the FS process. The BERA is currently in draft form and will be finalized prior to developing RAOs and preliminary remediation goals (PRGs; see Section 2).

The Newtown Creek Study Area is an industrialized tidal tributary of the East River, comprising a main channel and five dead-end tributaries that branch off the main channel. The unique characteristics of the Study Area warrant careful consideration of RAOs and both the spatial and temporal (i.e., sequencing) implementation of potential remedial alternatives. Specifically, the remedial alternatives evaluation process and FS structure will consider various potential remedy implementation approaches such as the following:
Introduction

- Segmentation of the Study Area consistent with the different physical characteristics, risk assessment conclusions, and current and future source influences to those areas
- Application of potentially different RAOs and PRGs for those segments
- Evaluation of the benefits of sequencing remedial actions to allow for more timely implementation and adaptive management

Segmentation of the Study Area is consistent with recommendations from the Contaminated Sediments Technical Advisory Group (CSTAG 2015) and the RI/FS Work Plan (AECOM 2011), which states the following:

> It is anticipated that the Study Area may be divided into sediment management areas (e.g., segments) depending on RI characterization and risk results (HHRA and ERA), anticipated future or ongoing sources of COPCs (e.g., continuing discharges), and sediment fate and transport considerations.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process needs to account for background conditions that will influence the long-term outcome of any remedy implemented at Newtown Creek. This site has some unique characteristics that are important to capture in establishing a site-specific background condition. Site-specific background conditions at Newtown Creek will reflect contributions from ongoing urban sources to the Study Area that include, but are not limited to, tidal flows from the East River, point source discharges, and overland flow.

The evaluation of background threshold values for the Newtown Creek watershed is under development (CDM Smith 2017).

Consistent with the site-specific background development concept described above, the remedial alternatives evaluation process must also reflect that the confines of the Study Area are coterminous with the federal Clean Water Act (CWA) and the Newtown Creek combined sewer overflow (CSO) Long-Term Control Plan (LTCP) planning area. The New York City Department of Environmental Protection (NYCDEP) has prepared an LTCP (NYCDEP 2017) for attaining water quality standards in Newtown Creek under an AOC between NYCDEP and the New York State Department of Environmental Conservation (NYSDEC).
2 REMEDIAL ACTION OBJECTIVES

USEPA’s *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (USEPA 2005) and the Directive issued by OLEM (USEPA 2017) both emphasize the importance of developing clearly defined RAOs to select the most appropriate remedy for a site. RAOs provide a general description of why a remedial action is being implemented and what the remedial action is expected to accomplish. RAOs are used in developing and comparing remedial alternatives for a site and provide the basis for developing more specific PRGs, which are used to select the final remedy in conjunction with other National Contingency Plan (NCP) remedy selection criteria (40 Code of Federal Regulations [CFR] 300 et seq.).

As discussed in the draft RI Report, the nature and extent of contamination in the Study Area varies throughout reaches of the main stem and tributaries due to several primary factors, including the following:

- The physical characteristics of the Study Area—in particular, differences between the downstream and upstream portions of the main channel, and between the main channel and the tributaries
- The location and sources of solids depositing on the sediment bed—in particular, solids originating from sources in and in the vicinity of Newtown Creek versus those from the East River
- Fate and transport processes—in particular, the mechanisms by which solids are deposited, resuspended, and transported

The RAOs will need to reflect the ongoing and future influence of urban sources to the Study Area that include but are not limited to tidal flows from the East River, point sources, and overland flow within the Study Area. It is also important to recognize the overall effects of urbanization as captured by conditions measured in similar reference areas for use in the draft RI Report, draft BERA, and BHHRA.

The conclusions of the BHHRA and draft BERA (once finalized) will serve as the basis for defining RAOs for CERCLA contaminants that pose potentially unacceptable risk via complete and quantifiable exposure pathways. These CWA-regulated releases will be considered in the FS with respect to background conditions in establishment of RAOs and
PRGs, and the CWA will be considered as a potential Applicable or Relevant and Appropriate Requirement (ARAR) specific to CERCLA-regulated contaminants.

As noted in the draft RI Report, BHHRA, and draft BERA, the nature and extent of chemical constituents, the physical characteristics, and the potential for human and ecological site exposure vary widely across the Study Area. Because of this variability, RAOs may vary across the Study Area.

RAOs for the Study Area will be developed after the risk assessments are finalized; the RAOs and the basis for developing PRGs will be presented in a separate technical memorandum prior to submittal of the Alternatives Memorandum.
3 FEASIBILITY STUDY PROCESS

This section discusses the approach and steps for conducting the FS. It is consistent with the general approach outlined in the RI/FS Work Plan but with certain updates based on advancements in the project based on requests and approvals from USEPA made since the time that document was developed.

The following four major documents will be submitted to USEPA during the FS process:

- **FS Field Program Work Plan** – documents the data collection activities planned to support FS evaluations
- **RAO Memorandum** – identifies RAOS and provides the basis for developing PRGs
- **Alternatives Memorandum** – identifies the PRGs and documents the screening of remedial technologies and development and preliminary screening of remedial alternatives to be evaluated in the Feasibility Study Report (FS Report)
- **FS Report** – contains the detailed and comparative analysis of remedial alternatives retained in the Alternatives Memorandum, incorporating information gathered during the Remedial Investigation (RI), as well as from implementation of the FS Field Program, and provides the basis for identification of a preferred alternative in the USEPA developed proposed plan

The general content of these documents is described in Sections 3.1, 3.2, 3.3, and 3.4, respectively. A schedule for the document submittals, which also includes regularly occurring technical discussions with USEPA, is currently being developed in cooperation with USEPA.

### 3.1 Feasibility Study Field Program Work Plan

The FS Field Program Work Plan will document the sampling activities, including the in situ stabilization treatability study (for proof of concept), planned to collect additional FS-related data; these data will supplement data gathered during the RI and will assist in the development and evaluation of remedial alternatives for the Study Area. The FS Field Program will be implemented following USEPA’s approval of Parts 1 and 2 of the FS Field Program Work Plan. Data gathered during the FS Field Program will be considered in the RAO Memorandum, the Alternatives Memorandum, and in FS evaluations. If deemed
necessary based on the results of the FS Field Program, the FS may include additional USEPA-approved field investigations (e.g., treatability studies, pilot studies) to support the evaluation of remedial alternatives.

### 3.2 RAO Memorandum

As requested by USEPA during development of this FS Work Plan, a separate RAO Memorandum will be developed following approval of both the BHHRA (Anchor QEA 2017a) and draft BERA (Anchor QEA 2017b; once finalized). The RAO Memorandum will present the RAOs and provide the basis and process for developing PRGs as part of the Alternatives Memorandum. The risk assessment results, in conjunction with the draft RI Report, will form the primary basis for the RAOs to be developed. To be further described in the memorandum, these RAOs, in conjunction with chemical-specific ARARs and estimates of site-specific background concentrations, will form the basis for contaminant-specific PRGs for the Study Area. PRGs are numeric expressions of the RAOs that are expected to meet acceptable risk or background levels targeted by the RAOs. PRGs will be developed as part of the Alternatives Memorandum for those contaminants, receptors, and exposure pathways and media that are necessary to achieve RAOs. PRGs may be developed for separate segments of the Study Area (e.g., a defined reach of Newtown Creek or the tributaries) to allow for consideration of background concentrations, spatial differences in exposure pathways and corresponding risk levels, ongoing sources, or site characteristics that may warrant a different remedy or combination of remedies.

### 3.3 Alternatives Memorandum

The RI/FS Work Plan originally called for the remedial alternatives screening process to be completed and documented in two separate documents (i.e., the Preliminary Alternatives Memorandum and the Refined Alternatives Memorandum). In the process of refining schedules with USEPA, the NCG and USEPA agreed that the Preliminary Alternatives Memorandum and the Refined Alternatives Memorandum could be combined into one comprehensive document, the Alternatives Memorandum. That document will be submitted to USEPA as the first part of the FS Report and will provide a summary of the RAO Memorandum, development and presentation of PRGs, identification of the General Response Actions (GRAs) and screening of remedial technologies, and development and
initial screening of remedial alternatives based on the RAOs and PRGs. These steps will identify a set of alternatives that will be carried through to the detailed and comparative analysis of alternatives in the FS Report.

The subsections that follow discuss the four major elements that will comprise the Alternatives Memorandum.

### 3.3.1 Summary of ARARs

Preliminary chemical-, location-, and action-specific ARARs and To Be Considereds (TBCs) were presented in the *Preliminary ARAR and TBC Tables for Consideration at Newtown Creek* (Anchor QEA 2011). As stated in a March 1, 2012 letter (Anchor QEA 2012), the preliminary ARARs and TBCs will be reviewed and revised during the FS process and presented in the Alternatives Memorandum. Draft final ARARs will be identified and applied as threshold criteria during the alternatives analysis in the FS Report. ARARs and TBCs may be revised after completion of the FS Report based on comments received on the FS Report and the proposed plan during the public comment period. Final ARARs and TBCs will be identified in the Record of Decision.

### 3.3.2 Summary of RAOs and PRGs

As described in Section 2, the identification of RAOs and process for the development of PRGs will be documented in detail in the RAO Memorandum. A summary of the previously identified RAOs and the development of the PRGs will be provided in the Alternatives Memorandum.

### 3.3.3 Identification of General Response Actions and Screening of Remedial Technologies

As described in USEPA’s general RI/FS guidance (1988), and consistent with specific contaminated sediment remediation guidance (USEPA 2005), the identification of GRAs and screening of remedial technologies is a step-wise process. The following three tiers of evaluation will be conducted to identify and screen technologies that will be used to develop remedial alternatives for the Study Area:
• Develop GRAs
• Identify and screen remedial technologies and process options with respect to technical implementability
• Evaluate representative process options for effectiveness, implementability, and cost

GRAs are major categories of cleanup activities, such as monitored natural recovery, institutional controls, containment, removal, or treatment. Types of technologies within each GRA, such as different containment options (e.g., thin-layer capping and engineered capping), are considered remedial technologies. Process options refer to specific variations in the way technologies are implemented, such as variations in capping specifications (e.g., variations in cap armor and chemical isolation layer components). The examples given for GRAs, remedial technologies, and process options are illustrative of a broader group that will be presented and refined in the Alternatives Memorandum.

3.3.4 Development and Initial Screening of Alternatives

Remedial alternatives will be assembled using technologies and process options retained from the initial identification and screening processes described in Section 3.3.2. The remedial alternatives will be assembled after the risk assessments are finalized, the conceptual site model (CSM) is agreed to, and RAOs and PRGs are developed. In accordance with USEPA (1988) RI/FS guidance, the assembled remedial alternatives will be screened to reduce the number of alternatives that are carried through to the FS for detailed and comparative analysis. Consistent with the NCP, this initial alternatives screening will be performed based on: 1) effectiveness; 2) implementability (technical and administrative); and 3) cost. For this step in the process, the NCP describes the three alternative screening criteria as follows:

• **Effectiveness.** *This criterion focuses on the degree to which an alternative reduces toxicity, mobility, or volume through treatment, minimizes residual risks and affords long-term protection, complies with ARARs, minimizes short-term impacts, and how quickly it achieves protection. Alternatives providing significantly less effectiveness than other, more promising alternatives may be eliminated. Alternatives that do not provide adequate protection of human health and the environment shall be eliminated from further consideration.*
• **Implementability.** This criterion focuses on the technical feasibility and availability of the technologies each alternative would employ and the administrative feasibility of implementing the alternative. Alternatives that are technically or administratively infeasible or that would require equipment, specialists, or facilities that are not available within a reasonable period of time may be eliminated from further consideration.

• **Cost.** The costs of construction and any long-term costs to operate and maintain the alternatives shall be considered. Costs that are grossly excessive compared to the overall effectiveness of alternatives may be considered as one of several factors used to eliminate alternatives. Alternatives providing effectiveness and implementability similar to that of another alternative by employing a similar method of treatment or engineering control, but at greater cost, may be eliminated.

In addition to these three criteria, consistent with the RI/FS Work Plan (AECOM 2011), the remedial alternatives screening process will “include evaluation of alternatives that include opportunities for reducing the environmental footprint of remedial design and construction activities and include consideration of the sustainability of the alternative.”

### 3.4 Feasibility Study Report

The FS Report will include the content indicated in USEPA (1988) RI/FS guidance and the requirements of the NCP. The essential components of an FS Report will be presented within the following sections (with the first three representing the RAO Memorandum and Alternatives Memorandum):

1. Summary of RI and risk assessments (including development of RAOs and PRGs)
2. Identification and screening of technologies
3. Development and screening of alternatives
4. Detailed analysis of alternatives
5. Comparative analysis of alternatives

The FS Report will describe the methodology and approach used in conducting the FS evaluations and will present the results of those evaluations, as well as any relevant information gathered during previous studies. The results of the detailed and comparative
analysis of remedial alternatives will be used by USEPA to identify a proposed remedial action.

Results from the FS Field Program and modeling activities conducted to support the FS will be described in appendices to the FS Report and summarized in the form of a CSM update in the main body. The modeling will be based upon the overall framework described in the *Modeling Approach Memorandum (2)* (MAM2; Anchor QEA 2016b). It includes a geographically neutral (geo-neutral) point source model, a hydrodynamic model, and a sediment transport model, as described in the *Final Modeling Results Memorandum* (see Appendix G of the draft RI Report; Anchor QEA 2016a), as well as groundwater discharge and chemical loading components, as described in the *Groundwater Evaluation* (see Appendix F of the draft RI Report). Furthermore, chemical fate and transport and bioaccumulation models are currently under development to aid in the evaluation of remedial alternatives (as described in the MAM2 [Anchor QEA 2016b] and *Modeling Approach Memorandum (3)* [Anchor QEA 2017c], respectively). The development and calibration of these models will be documented in a separate report to be submitted to USEPA prior to submittal of the FS Report. The use of the model framework to evaluate the remedial alternatives in the FS (i.e., future predictions of chemical concentrations in sediment, water, and fish tissue) will be documented in an appendix to the FS Report.

The Alternatives Memorandum will contain a summary of the risk assessments and linkage to RAOs and PRGs, the identification GRAs and screening of remedial technologies and process options, and the development and initial screening of alternatives. A summary of those components will be included in the FS Report. The five main components of the FS Report are described in greater detail in Sections 3.4.1 through 3.4.5.

### 3.4.1 Remedial Investigation and Risk Assessment Summary

The results of the risk assessments will be summarized in the RAO Memorandum and will be referenced in the Alternatives Memorandum and FS Report. The FS Report will also present an updated CSM (e.g., based on RI and FS Field Program data and the modeling studies) that integrates the information gathered through extensive physical, chemical, and biological characterizations obtained in the RI and FS stages of the project, to provide a coherent
description of the Study Area relevant to the development of the FS Report. The RI and risk assessment summary and updated CSM sets a foundation for the FS to inform risk management decisions and evaluate remedial alternatives.

3.4.2 Identification and Screening of Technologies Summary
As described in Section 3.3.2, the steps undertaken to identify and screen potential technologies that will be used in the remedial alternatives will be documented in detail in the Alternatives Memorandum and summarized in the FS Report.

3.4.3 Development and Screening of Alternatives Summary
As described in Section 3.3.3, the steps undertaken to develop and screen alternatives for further evaluation in the FS Report will be documented in detail in the Alternatives Memorandum and summarized in the FS Report.

3.4.4 Detailed Analysis of Alternatives
Remedial alternatives that are retained following the initial alternatives screening process in the Alternatives Memorandum will be evaluated in accordance with the NCP. The remedial alternatives evaluation will consider the guidance documents listed in Section 1.

Remedial alternatives will be assessed in detail using the nine CERCLA FS evaluation criteria. The following nine evaluation criteria (two threshold, five balancing, and two modifying criteria) have been established and defined by USEPA (1988, 2005) to address the overall requirements of CERCLA and the NCP:
• Threshold criteria:
  1. Overall protection of human health and the environment
  2. Compliance with ARARs

• Balancing criteria:
  3. Long-term effectiveness and permanence
  4. Reduction of toxicity, mobility, or volume through treatment
  5. Short-term effectiveness
  6. Implementability
  7. Cost

• Modifying criteria:
  8. State acceptance
  9. Community acceptance

The first seven of the nine evaluation criteria serve as the basis for conducting the detailed analysis of the comprehensive alternatives in the FS Report. The two threshold criteria must be met for an alternative to be acceptable. The five balancing criteria provide a means of evaluating alternatives against one another in the FS. The two modifying criteria will be further evaluated by USEPA at a later stage in the CERCLA process.

The process of selecting an effective remedy as part of the FS will include the evaluation of changes in risk both during implementation (short term) and over the longer-term timeframes until RAOs are achieved post-remedy implementation. The modeling framework described previously will support these evaluations by predicting future chemical concentrations in sediment, water, and fish tissue for future remedial scenarios. Any evaluation of remedial alternatives needs to account for future CWA-regulated loadings of CERCLA contaminants from CSOs and municipal separate storm sewer system (MS4) discharges discharging to Newtown Creek in conjunction with other site-specific

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2 CERCLA requires that remedial actions comply with the substantive provisions of federal and state promulgated ARARs, unless such standards are waived. If it is found that the most suitable remedial alternative does not meet an ARAR, the NCP provides for waivers of ARARs under certain circumstances. See 40 CFR 300.430(f)(1)(ii)(C).
background concentrations of CERCLA-regulated hazardous substances, pollutants, or contaminants that may continue to impact the Study Area in the future.

The NCG will evaluate green and sustainable remediation in accordance with CERCLA, the NCP, and USEPA guidance.

3.4.5 **Comparative Analysis of Alternatives**

Following the detailed analysis of each alternative on an individual basis, the alternatives will be evaluated on a comparative basis using the seven threshold and balancing criteria listed in Section 3.4.4. Consistent with USEPA (1988, 2005) guidance, the advantages and disadvantages of each alternative will be weighed against those of the other alternatives to aid in the selection of a final remedy. As discussed in Section 3.4.4, the sustainability of the remedial alternatives will be considered in the comparative analysis.
4 FEASIBILITY STUDY PROJECT MANAGEMENT

This section describes the current project management organization and responsibilities for the FS. An organizational chart is provided in Figure 4-1. Lines of communication will be maintained among project personnel and the FS Leads. Communication will also be maintained regularly between the Project Manager, the RI and FS Managers, the NCG, and USEPA.

4.1 Feasibility Study Manager

The FS Manager will be responsible for the overall management of the FS process and coordinating the efforts of the task leads. The FS Manager will be the primary point of contact between the NCG and the FS technical team. The FS Manager is Paul LaRosa, Professional Engineer (P.E.).

4.2 Senior Advisor

The Senior Advisor will provide technical assistance to the FS team and will perform senior review of the FS and related technical memoranda. The Senior Advisor is Ram Mohan, Ph.D., P.E.

4.3 Feasibility Study Coordinator

The FS Coordinator will support the FS Manager with the development of the FS Report and related technical memoranda. The FS Coordinator is Amanda Shellenberger, P.E.

4.4 Alternatives Development Task Lead

The Alternatives Development Task Lead will be responsible for identifying, screening, and evaluating remedial alternatives. The Alternatives Development Task Lead will also be responsible for authoring the Alternatives Memorandum. The Alternatives Development Task Lead is Stu Messur.

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3 FS staffing is subject to change, with USEPA approval.
4.5 **Modeling Task Lead**

The Modeling Task Lead will be responsible for overseeing the completion of all modeling efforts to support the FS process consistent with the modeling framework discussed in Section 3.4. The Modeling Task Lead will coordinate with the modeling work groups as appropriate. The Modeling Task Lead is Kevin Russell.

4.6 **Cost Estimating Task Lead**

The Cost Estimating Task Lead will be responsible for supporting the Alternatives Development Task Lead in developing estimated costs for each of the alternatives to support the detailed and comparative evaluations. The Cost Estimating Task Lead is John Verduin, P.E.

4.7 **Dredging/Constructability Task Lead**

The Dredging/Constructability Task Lead will support the Alternatives Development Task Lead with developing, screening, and detailed evaluation of remedial alternatives. The Dredging/Constructability Task Lead is Paul Doody, P.E.

4.8 **Capping Task Lead**

The Capping Task Lead will support the Alternatives Development Task Lead with developing, screening, and detailed evaluation of remedial alternatives that include capping. The Capping Task Lead is Matt Henderson, P.E.
5 SCHEDULE FOR FEASIBILITY STUDY

The schedule summarizing milestones for completing the FS is currently being developed in cooperation with USEPA.
6 REFERENCES


FIGURE
Figure 4-1
Feasibility Study Organizational Chart
Feasibility Study Work Plan
Newtown Creek RI/FS

1. Registered Professional Engineer in New York
2. Registered Professional Engineer in Washington