February 2019
Newtown Creek

ANCHOR QEA

Statement of Work for Early Action Focused Feasibility Study

Prepared for the Newtown Creek Group

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Newtown Creek

Statement of Work for Early Action Focused Feasibility Study

Prepared for
The Newtown Creek Group

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ABBREVIATIONS

ASAOC	Administrative Settlement Agreement and Order on Consent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm	centimeter
CM	creek mile
COC	contaminant of concern
CSM	conceptual site model
CSO	combined sewer overflow
Cu	copper
EA	Early Action
FFS	Focused Feasibility Study
FS	Feasibility Study
GRA	General Response Action
mg/kg	milligrams per kilogram
MS4	municipal separate storm sewer systems
NAPL	nonaqueous phase liquid
NCP	National Contingency Plan
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RAL	remedial action level
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RI Report	*Remedial Investigation Report*
ROD	Record of Decision
SCS	Sediment Characterization Study
SCS Work Plan	*Sediment Characterization Study Work Plan*
SOW	Statement of Work
SWAC	surface-weighted average concentration
Target Area	area targeted for potential active remediation
USEPA	U.S. Environmental Protection Agency

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1 Introduction

1.1 Purpose of the Statement of Work

This Statement of Work (SOW) provides an overview of the Focused Feasibility Study (FFS) that will be carried out by the signatories of the Administrative Settlement Agreement and Order on Consent (ASAOC) for the purpose of evaluating the potential for an Early Action (EA) in creek mile (CM) 0–2 of the Newtown Creek Study Area; the SOW is a material document for the Settlement Agreement. The FFS will evaluate potential remedial options for an EA remedy in the lower 2 miles (CM 0–2; excluding Dutch Kills and Whale Creek tributaries) of the Newtown Creek Study Area. The FFS will form the basis for the determination of whether an EA remedy is appropriate or whether the selection of a remedy should be deferred pending completion of the site-wide Feasibility Study (FS) and Record of Decision (ROD). If an EA remedy is appropriate for CM 0–2, it will be memorialized in a ROD. A subsequent ASAOC will need to be negotiated and executed to govern final remedial design and implementation of any EA remedy selected in the ROD.

1.2 Context, Conceptual Site Model, Influence of Background

As part of the Remedial Investigation/Feasibility Study (RI/FS) process completed to date, extensive characterization of the Study Area has occurred as documented in the *Remedial Investigation Report* (RI Report; Anchor QEA 2016), which is currently being revised for re-submittal to the U.S. Environmental Protection Agency (USEPA) in April 2019. Through this work, it has been demonstrated that background conditions associated with Newtown Creek will influence remedy outcome. These conditions and their ramifications on remedy selection and success are explained further in Sections 1.2.1 through 1.2.3.

1.2.1 Context

Newtown Creek is a heavily industrialized dead-end tidal tributary of the East River. Combined sewer overflows (CSOs), municipal separate storm sewer systems (MS4s), industrial outfalls, overland flows, other stormwater inputs, and groundwater provide the only non-tidal input to the Study Area. These conditions will continue in the future, even after significant CSO controls are implemented by the New York City Department of Environmental Protection under its approved *Combined Sewer Overflow Long Term Control Plan for Newtown Creek* (AECOM 2017), which is not expected to be completed until 2042. This lack of naturally occurring freshwater inputs, coupled with the interaction of the system with the East River, is significant in establishing the long-term sustainable cleanup goals for Newtown Creek.

The RI Report (Anchor QEA 2016) and USEPA-approved *Baseline Ecological Risk Assessment* (Anchor QEA 2018) and *Baseline Human Health Risk Assessment* (Anchor QEA 2017) established polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and copper (Cu) as

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primary contaminants of concern (COCs). As a result of the creek's unique conditions, COCs in the lower portion of Newtown Creek are approaching concentrations in surface sediment that are as low as can reasonably be expected, given the regional background conditions that influence the lower portion of the Study Area. Therefore, an EA study has been developed that will evaluate expedited improvement of the lower portion of the Study Area toward achievement of those background levels. Through the extensive studies completed as part of the Remedial Investigation (RI), a conceptual site model (CSM) has been developed, and each of the source pathways that comprise that CSM and could influence remedy success are addressed in the following section.

1.2.2 Conceptual Site Model and Source Pathway Considerations for CM 0–2

The Newtown Creek RI showed that tidal flow from the East River is the dominant source of solids to the surface water and sediment in CM 0–2. The lower 2 miles of Newtown Creek are net depositional, and natural recovery toward urban background conditions is expected to continue over time via deposition of solids from the East River. The creek bed is physically stable as evidenced by minimal or no net erosion of the sediment bed (supported by pre- and post-Hurricane Sandy bathymetric evaluation) and lower concentrations of COCs observed in surface (0 to 15 centimeters [cm]) sediment versus subsurface (deeper than 15 cm) sediment.

Preliminary evaluations of ongoing sources in CM 0–2 indicate that they will not negatively impact EA remedy success. The FFS will evaluate each of these source pathways in detail. A brief summary of source pathway considerations in CM 0–2 is included in the following:

- **Nonaqueous Phase Liquid (NAPL):** Extensive sampling was conducted throughout Newtown Creek to characterize NAPL presence and extent. Based on USEPA-approved methods for defining NAPL, surface sediment did not require any further assessment or investigation while subsurface sediment in the area of CM 1.6 to 1.7 exhibited NAPL that was generally discontinuous and in residual form. Nonetheless, NAPL mobility tests were performed on samples throughout CM 0–2 at locations and depths containing the highest apparent NAPL saturation, and no NAPL mobility was observed in any sample tested from CM 0–2.
- **Gas Ebullition:** Field surveys were conducted in 2015 and 2016 to characterize the presence and extent of gas ebullition-facilitated NAPL transport throughout Newtown Creek. Based on the 2015/2016 studies, CM 0–2 was not targeted for further data collection as part of the FS quantitative gas ebullition study because of minimal gas ebullition and sheen blossoms observed in CM 0–2.
- **Groundwater:** An extensive groundwater evaluation was conducted to characterize groundwater discharge and chemical loads to the creek. Results indicate that groundwater is not a significant source of chemical loads to surface sediments and surface water to the creek.

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Groundwater chemical loading to the base of creek sediment does not translate directly to chemical concentrations in surface sediment and surface water due to the extensive attenuation in the subsurface sediment and partitioning processes. Groundwater chemical loading associated with lateral groundwater flow directly to surface water is considered negligible within CM 0–2 because surface water quality in areas where lateral groundwater flow occurs is no different than surface water quality throughout the Study Area.

- **Point Sources:** The point sources evaluation process sampled discharges representing approximately 84% of the total estimated volume of annual point sources discharge and overland flow to the creek. Current point source concentrations are within the range of background levels, with a few exceptions.
- **Shoreline Erosion:** There are relatively few areas of potentially erodible shorelines in CM 0–2, and they are already accounted for in sediment sampling. Where potentially erodible shorelines exist in CM 0–2, they are generally not adjacent to areas of elevated sediment concentration.

1.2.3 Influence of Background on Newtown Creek

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process needs to account for the protection of human health and the environment, and where risk-based levels are not achievable due to the influence of background conditions, an appropriate background level must be established and factored into remedial decision-making. There are important characteristics associated with Newtown Creek, such as the physical structure, surrounding land uses, and hydrodynamic and sediment transport dynamics that are important to capture in establishing a site-specific background condition. Site-specific background conditions at Newtown Creek will continue to 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 stormwater flow. Developing an understanding of site-specific urban background conditions in Newtown Creek requires a comparison to conditions in waterbodies that are similar to Newtown Creek but are not influenced by the releases of hazardous substances and other contaminants that are the focus of the RI/FS process being conducted in the Study Area. A number of reference areas have been approved by USEPA for this comparison. These reference areas include industrialized and CSO-influenced dead-end tidal tributaries to the East River (i.e., Westchester Creek, Flushing Creek, Brooklyn Navy Yard, Coney Island Creek, and Steinway Creek), as well as a portion of the East River itself near the mouth of Newtown Creek.

Based on a comparison of PCB, PAH, and Cu concentrations in the USEPA-approved reference areas, the range of concentrations of these three constituents in the surface sediments in CM 0–2 are substantially within the range of background as represented by the USEPA-approved reference areas and the conditions that influence urban background in Newtown Creek. However, there are several

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isolated areas in CM 0–2 where surface sediment (0 to 15 cm) concentrations of PCBs, PAHs, and/or Cu are above the upper end of the range of urban background levels. Therefore, the EA remedy in CM 0–2 will address these areas, referred to as areas targeted for potential active remediation (Target Areas). The EA will remediate the surface sediments in the Target Areas, with the goal of reducing the average surface sediment concentrations of these constituents throughout CM 0–2 to acceptable risk-based concentrations or to concentrations similar to the approved background reference area concentrations, whichever are higher. As described in USEPA's policy on the role of background levels in the CERCLA cleanup program (USEPA 2002), cleanup levels at CERCLA sites are not normally set at concentrations below natural or anthropogenic background levels. The EA will be followed by implementation of a performance monitoring program to verify anticipated performance.

1.3 Organization of Document

Sections 2 through 4 of this SOW describe the project as follows:

- Section 2 sets forth the process for developing and implementing the FFS Sediment Characterization Study (SCS), developing the FFS, and developing the EA Performance Monitoring Plan.
- Section 3 sets the schedule for submitting the deliverables.
- Section 4 contains references.

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2 Early Action Evaluation for CM 0–2

2.1 FFS Sediment Characterization Study

Details regarding the FFS SCS are contained in this section.

2.1.1 Purpose

The primary goals of the SCS are to collect data to refine the Target Areas and develop, screen, and evaluate the remedial alternatives in the FFS. This step will be completed as the first phase of the FFS. Once the EA remedy footprint is established via the results of this first phase of the FFS, then the FFS document itself will be completed as the second phase of the FFS.

2.1.2 Description of FFS Sediment Characterization Study Tasks

An FFS *Sediment Characterization Study Work Plan* (SCS Work Plan) deliverable will be prepared (draft and final as per the schedule detailed in Section 3) that will contain the following elements:

- A description of existing surface sediment data, as well as data gaps for Target Area delineation (areas of active remedy defined by remedial action levels [RALs])
- A project-specific *Field Sampling and Analysis Plan*, including details of the media to be sampled, contaminants for which samples will be analyzed, locations and depths, numbers of samples, and project schedule
- A project-specific *Quality Assurance Project Plan* consistent with the existing sitewide RI/FS process
- A project-specific *Data Management Plan* summarizing the management of data resulting from field investigations during the FFS SCS
- A project-specific *Health and Safety Plan* consistent with the existing site-wide RI/FS process
- A project-specific description of transportation and off-site disposal plan for investigation-derived waste

The FFS SCS is targeted to be implemented in early 2019 (consistent with the schedule detailed in Section 3), and the results will be integrated into the FFS.

2.2 Focused Feasibility Study

The FFS approach will consider the *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (USEPA 2005) and *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* (USEPA 2017). The FFS will be conducted in accordance with *A Guide to Developing and Documenting Cost Estimates During the*

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Feasibility Study (USEPA 2000), which contains cost related information that supersedes information described in USEPA's general RI/FS guidance (USEPA 1988).

2.2.1 Purpose

The purpose of the FFS is to confirm the appropriateness of an EA remedy for CM 0–2, and to develop and evaluate a focused range of remedial alternatives for an EA in CM 0–2 of Newtown Creek, confined to the Target Areas determined by RALs and refined based on the surface sediment chemistry results from the FFS SCS. These options will include no action and a focused range of remedial measures that represent permutations of removal of surface sediment to depths of approximately 2 to 4 feet and placement of appropriate cover material.

The FFS will evaluate this limited range of EA remedial alternatives for CM 0–2 to identify a preferred remedy that will address the overall requirements of CERCLA and the National Contingency Plan (NCP).

The FFS Report will contain the following information and analyses:

1. Description of Current Conditions in CM 0–2
2. Description of RALs and Target Areas for EA
3. Use of Adaptive Management and Early Action Threshold Decision
4. Identification of General Response Actions (GRAs) and Screening of Remedial Technologies for CM 0–2
5. Development and Initial Screening of Alternatives for EA
6. Detailed Analysis of EA Remedial Alternatives
7. Comparative Analysis of EA Alternatives for CM 0–2
8. Supporting Appendices

2.2.2 Description of Focused Feasibility Study Tasks

1. Description of Current Conditions in CM 0–2

The results of the RI, with a focus on CM 0–2, and the results of the FFS SCS will be summarized in the FFS Report. The FFS Report will also present an updated version of the existing CSM for CM 0–2 (e.g., based on RI and FS field program data and associated modeling studies) to provide a complete description of CM 0–2 relevant to the development of the FFS Report. The updated CSM will set a foundation for the FFS to evaluate remedial alternatives for CM 0–2.

2. Description of RALs and Target Areas for EA

USEPA identified a range of possible RALs for the PCBs, PAHs, and Cu identified based on analysis of the data from the USEPA-approved background reference areas. It is anticipated that when the areas in CM 0–2 containing surface sediments that exceed the RALs are remediated, the resulting

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surface-weighted average concentrations (SWACs) in CM 0–2 will be similar to the range of SWACs represented by the background reference areas. Selection of this range of RALs acknowledges that for Newtown Creek there will be a balance between achieving cleanup levels that are attainable due to the influence of the East River, as well as the urban background environment adjacent to the waterbody. Applying these RALs to CM 0–2 is intended to result in a long-term SWAC that is consistent with background concentrations. In addition, concentrations of PAHs and Cu, which are already at or below acceptable risk levels in CM 0–2, will remain at or below these levels on a long-term basis. However, in the case of PCBs, where background sediment concentrations contribute to risks that exceed USEPA target risk ranges, the remediation of Target Areas that exceed the range of PCB RALs will nonetheless reduce risks to the extent practical. The range of RALs to be used for the EA in CM 0–2 are the following:

- PCBs: 1.2 to 1.4 milligrams per kilogram (mg/kg)
- Total PAHs: 65 to 85 mg/kg
- Cu: 400 to 500 mg/kg

A final RAL for each of the three constituents that falls within the ranges identified in the preceding list will be established in the FFS. These final RALs will be used to delineate the Target Areas within CM 0–2 based on surface (0 to15 cm) sediment concentrations. Concentrations of sediments at depth are not considered to be drivers for establishing the Target Areas. The rationale for this is supported by the CSM detailed in Section 1.2.2 based on results from extensive studies during the RI including the following:

- The East River is the dominant source of solids to the surface water and sediment in CM 0–2.
- Sediments in CM 0–2 are largely stable and accreting and not prone to erosion or redistribution.
- The presence of NAPL is very limited in CM 0–2 (only found to be present at depth at CM 1.7).
- NAPL is not mobile in CM 0–2 and does not influence the surface sediment concentrations.
- Groundwater-based mobility and transport of at-depth sediment-based contaminants are not factors in deriving the current surface sediment concentrations.
- Current point source concentrations are within the range of background levels, with a few exceptions.

For these reasons, the initial remedy footprint delineation is based on surface sediments exceeding the range of RAL values.

Applying USEPA's range of RALs to the existing surface sediment chemistry data results in the identification of 12 to 24 surface sediment samples that exceed the upper or lower range of the RALs, respectively, for one or more COCs. Based on these exceedances, preliminary Target Areas have been identified using Thiessen polygons (see Figure 2). Collectively, these 12 to 24 areas

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represent an 8- to 17.4-acre footprint. The Target Areas will be refined through surface sediment samples collected during the FFS SCS and will be the basis of analysis for each of the FFS alternatives evaluated.

3. Use of Adaptive Management and Early Action Threshold Decision

The objectives of USEPA and the Newtown Creek Group are to utilize adaptive management and other relevant recommendations from the Superfund Task Force to evaluate the potential for an EA remedy that may serve as a final remedy in Target Areas of the lower 2 miles of the Study Area. The work performed to date through the Study Area RI/FS indicates that the surface sediment concentrations in CM 0–2 are influenced by sediment deposition from the East River and other urban background sources and that contamination in deep sediments or ongoing sources will not negatively impact EA remedy success. That work further suggests that targeted removal of surface sediments, with attendant backfilling or capping, in the general location of the areas noted previously (to be refined based on results of the FFS SCS) would likely result in overall surface sediment chemical concentrations in CM 0–2 that are consistent with background surface sediment chemical concentrations and may serve as a final remedy for that portion of the Study Area.

The current CSM for CM 0–2 suggests it is a good candidate area for an adaptive management approach that could potentially provide a final remedy for a large portion of the Study Area. However, both the Respondents and USEPA acknowledge that the purpose of the FFS, and in particular the FFS SCS, is to confirm that an EA remedy is appropriate and fits within the principles of adaptive management. Should the outcome of the FFS, or the studies supporting the FFS, conclude that CM 0–2 is not an appropriate area for adaptive management-based EA, then a remedy for this area will be deferred until the final site-wide ROD and will be incorporated into that decision. Factors that will influence a threshold decision to complete an EA remedy include the following:

- A remedy footprint that is reasonably confined and can be designed and implemented in a short timeframe that is in advance of the site-wide ROD
  - Analysis to date suggests a targeted remedy involving removal and replacement of up to approximately 60,000 cubic yards of sediment across approximately 12 acres could reasonably be implemented before a site-wide ROD, while a substantially larger remedy would likely require consideration in the site-wide FS.
- An evaluation outcome that confirms the correctness of the CSM for CM 0–2 and that ongoing sources will not negatively impact remedy success in the lower 2 miles
- An evaluation outcome that confirms long-term background-based concentrations are sustainable in CM 0–2

The timing for a threshold determination about the suitability of an EA remedy for CM 0–2 could be as early as the FFS SCS data are available or as late as the completion of the FFS Report.

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4. Identification of GRAs and Screening of Remedial Technologies for CM 0–2

GRAs for CM 0–2 will be identified and screened consistent with USEPA's general RI/FS guidance (1988) and will be consistent with specific contaminated sediment remediation guidance (USEPA 2005). It is anticipated that GRAs evaluated in this FFS will be limited to monitored natural recovery, and removal and cover.

5. Development and Initial Screening of Alternatives for EA

It is anticipated that the alternatives to be evaluated will include no action and permutations that will consider sediment removal depths of 2 to 4 feet and different cover materials (e.g., clean sand and/or cover amended with organic carbon) to be placed over the dredged surface within the Target Areas. Site-specific conditions at the individual Target Areas will be considered to establish aerial extent and remedy depths. Monitored natural recovery is the presumed technology to be applied as part of this EA in areas within CM 0–2 outside of the Target Areas.

Remedial alternatives will be compiled using technologies and process options retained from the initial identification and screening processes described in Step 3. In accordance with USEPA's RI/FS guidance (1988), the remedial alternatives will be screened to reduce the number of alternatives that are carried through for detailed and comparative analysis. Consistent with the NCP, this initial screening of alternatives will be performed based on the following: 1) effectiveness; 2) implementability (technical and administrative); and 3) cost.

6. Detailed Analysis of EA Remedial Alternatives

Remedial alternatives that are retained following the initial alternatives screening process will be evaluated in accordance with the NCP. Remedial alternatives will be assessed in detail using the seven CERCLA FS evaluation criteria (two threshold and five balancing). In addition, two modifying criteria, state and community acceptance, will be evaluated by USEPA prior to issuing any future ROD. These nine criteria were 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 Applicable or Relevant and Appropriate Requirements as they pertain to the FFS and the alternatives that have been identified above
- 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

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- Modifying criteria (considered after the FFS):
    8. State acceptance
    9. Community acceptance

7. Comparative Analysis of EA Alternatives for CM 0–2

Following the detailed analysis of each alternative for CM 0–2 on an individual basis, the alternatives will be evaluated on a comparative basis using the seven threshold and balancing criteria listed in Step 5. Consistent with USEPA guidance (1988, 2005), 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 for CM 0–2.

8. Supporting Appendices

Technical evaluations used to support the Detailed Analysis of EA Remedial Alternatives will be provided in appendices, as appropriate.

2.3 Early Action Performance Monitoring Plan

The EA *Performance Monitoring Plan* will be prepared consistent with USEPA guidance (USEPA 2005). Details regarding the EA *Performance Monitoring Plan* are included in this section.

2.3.1 Purpose

The EA *Performance Monitoring Plan* will provide the specifics of both the short-term and long-term monitoring approaches, as well as the types of evaluations that will be completed using the monitoring data.

2.3.2 Description Early Action Performance Monitoring Plan

The process of evaluating EA remedy alternatives as part of the FFS will include the evaluation of remedy success and effectiveness both during implementation (short term) and over the longer term. Short-term (1 to 5 years) metrics will focus on remedy implementation success and confirmation of the CSM through collection and analysis of data such as bathymetry, sediment profile imagery, and sediment traps. Long-term (5 plus years) metrics will be informed by the results from short-term evaluations, with a focus on surface sediment chemistry comparisons and other metrics similar to the short-term data collection efforts that take into account long-term conditions sustainable in Newtown Creek.

The SWACs for each of the primary COCs addressed by the EA for CM 0–2 will be compared to a range of relevant urban background SWACs, as represented by the USEPA-approved reference areas used to establish the RALs (Westchester Creek, Flushing Creek, Brooklyn Navy Yard, Coney Island Creek, Steinway Creek), and an additional reference area established in the East River near the mouth

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of Newtown Creek. These six reference areas are depicted in Figure 3. When the reference areas are sampled as part of the long-term monitoring evaluation, this new additional reference area in the East River near the mouth of Newtown Creek will be preliminarily sampled to identify locations with physical sediment properties within that area that are similar to Newtown Creek's sediments. A range of reference area SWACs will be established and compared to the post-remedy SWACs in CM 0–2 to demonstrate that over time the SWACs in CM 0–2 are within the range of SWACs calculated from the background reference areas for each primary COC. Monitoring data, to the extent available, will be incorporated into the site-wide FS. If the monitoring demonstrates that the SWACs in CM 0–2 are similar to the range of reference area SWACs, then the site-wide FS will acknowledge the success of the EA and the need for no further action in this part of the Study Area.

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3 Schedule

Deliverables and tasks required under this SOW will be submitted or completed by the deadlines or within the time durations listed in the following schedule. Respondents may submit proposed revised schedules, including, as appropriate, elimination or consolidation of deliverables, for USEPA approval. Upon USEPA's approval, the revised schedules (and, as appropriate, list of deliverables) supersede the following schedule and any previously approved schedule.

Task Number	Task Description of Deliverable	Reference	Deadline
1a	Draft FFS SCS Work Plan	2.1	60 days after USEPA's signature of the ASAOC
1b	USEPA's comments on Draft FFS SCS Work Plan	--	30 days following receipt of Draft FFS SCS Work Plan
1c	Final FFS SCS Work Plan	--	30 days after USEPA's comments on the Draft FFS SCS Work Plan
2a	Draft FFS	2.2	60 days after receipt of validated FFS data
2b	USEPA's comments on Draft FFS	--	60 days after receipt of Draft FFS
2c	Final FFS	--	45 days after USEPA's comments on the Draft FFS
3a	Draft *EA Performance Monitoring Plan*	2.3	TBD anticipated 1st half of 2019 to avoid overlap with the FFS review
3b	USEPA's comments on Draft *EA Performance Monitoring Plan*	--	60 days after receipt of Draft *EA Performance Monitoring Plan*
3c	Final *EA Performance Monitoring Plan*	--	45 days after USEPA's comments on the Draft *EA Performance Monitoring Plan*

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Figures

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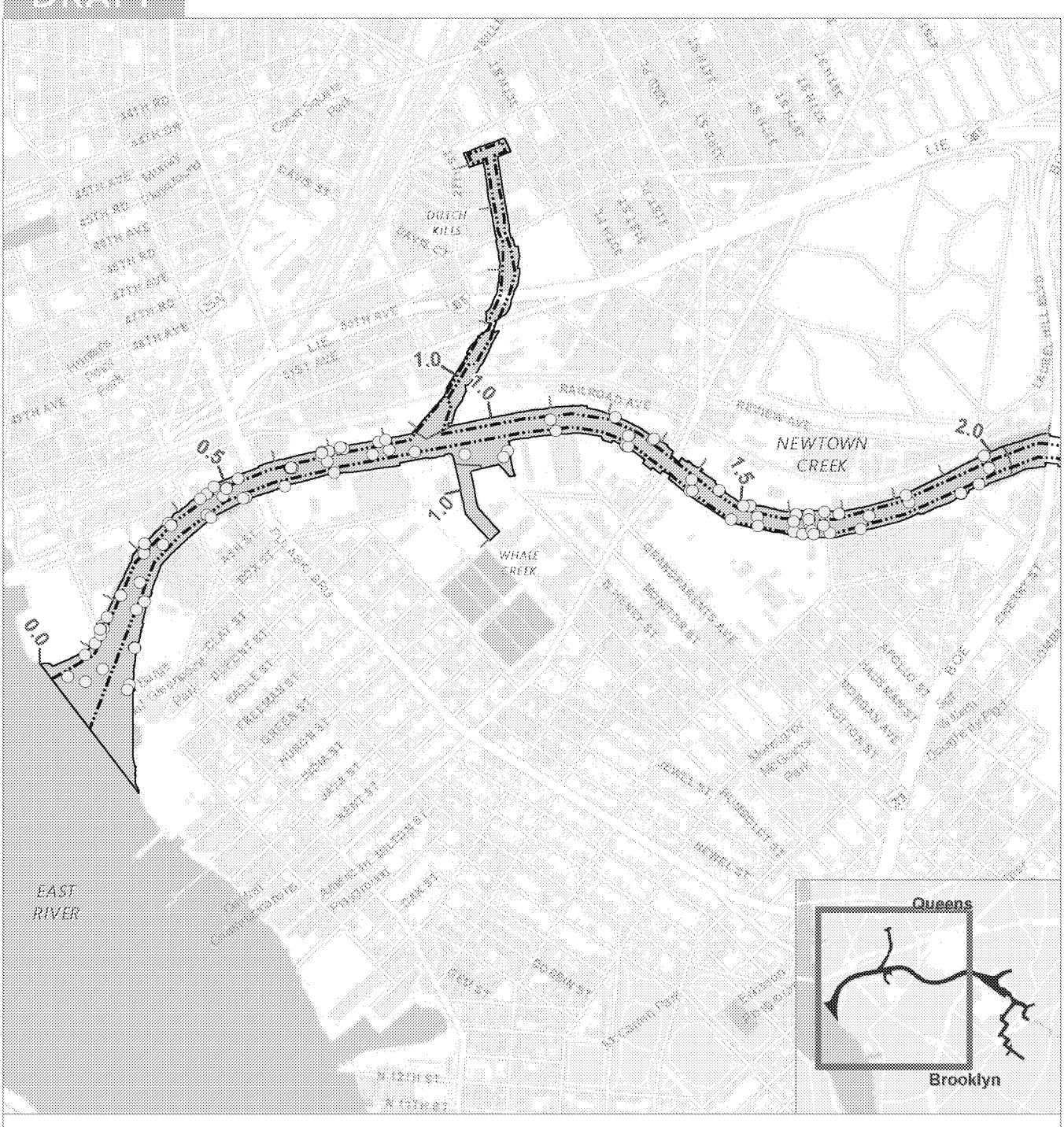

LEGEND:

- Navigation Channel
- Newtown Creek
- CM 0–2 Early Action Area
- Surface Sediment Sample Location – No NAPL Reported

NOTES:

1. Base data: Esri World Light Gray Canvas
2. Cores shown were collected during the Phase 1, Phase 2, and FS Part 1 field programs.
3. Creek mile hatches are shown every tenth mile and labeled every half mile.

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Feet

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Figure 1
NAPL Observations in Surface Sediment for Newtown Creek CM 0 – 2
Statement of Work for Early Action Focused Feasibility Study
Newtown Creek

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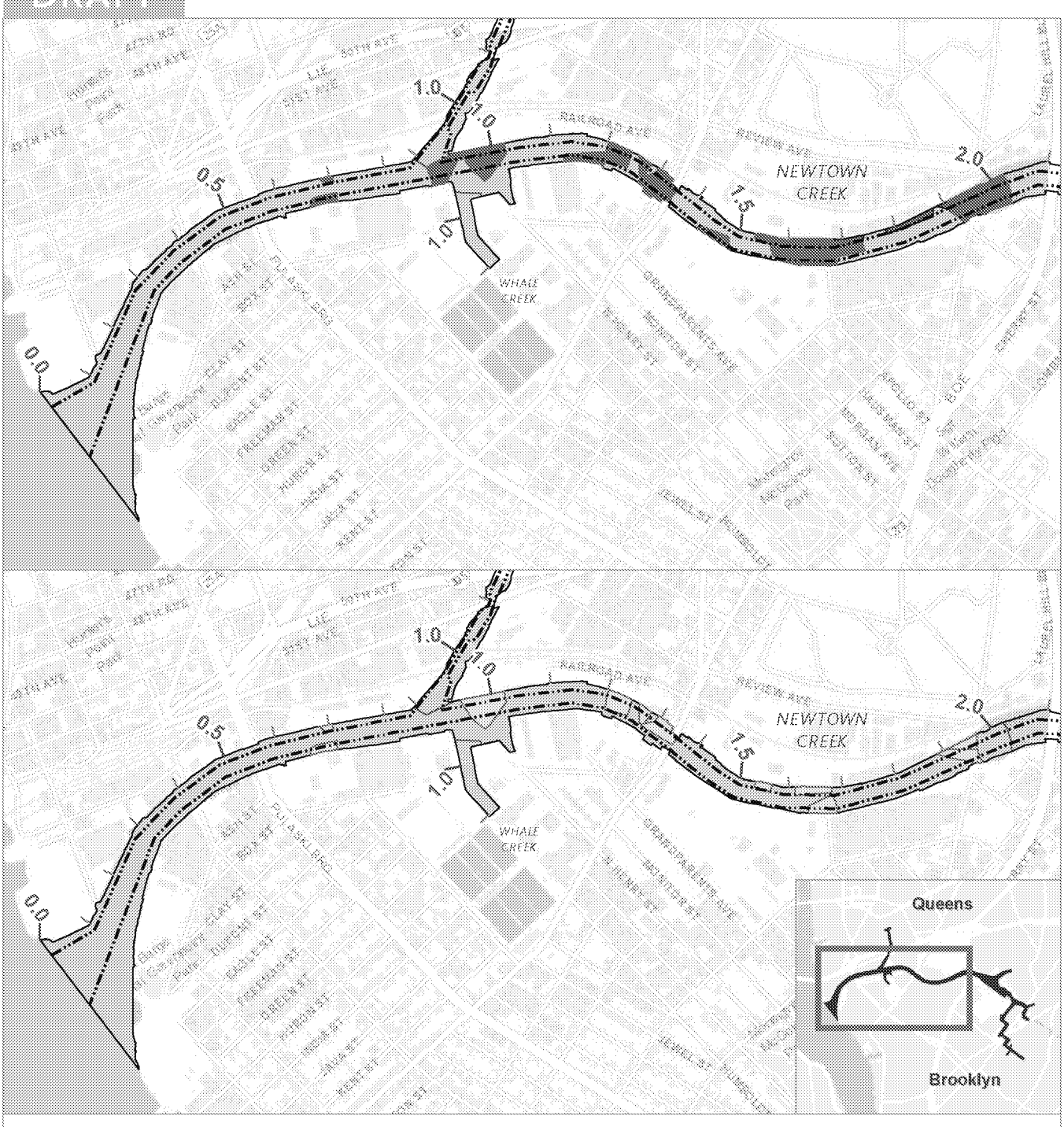

LEGEND:

- Navigation Channel
- Newtown Creek
- CM 0–2 Early Action Area

Preliminary Target Area Ranges	
COC	Remedial Action Level (mg/kg)
Total PCBs	1.2
Total PAH (17)	65
Copper	400

COC	Remedial Action Level (mg/kg)
Total PCBs	1.4
Total PAH (17)	85
Copper	500

NOTES:
1. Base data: Esri World Light Gray Canvas
2. Creek mile hatches are shown every tenth mile and labeled every half mile.
3. COC: contaminant of concern

0 1,000
Feet

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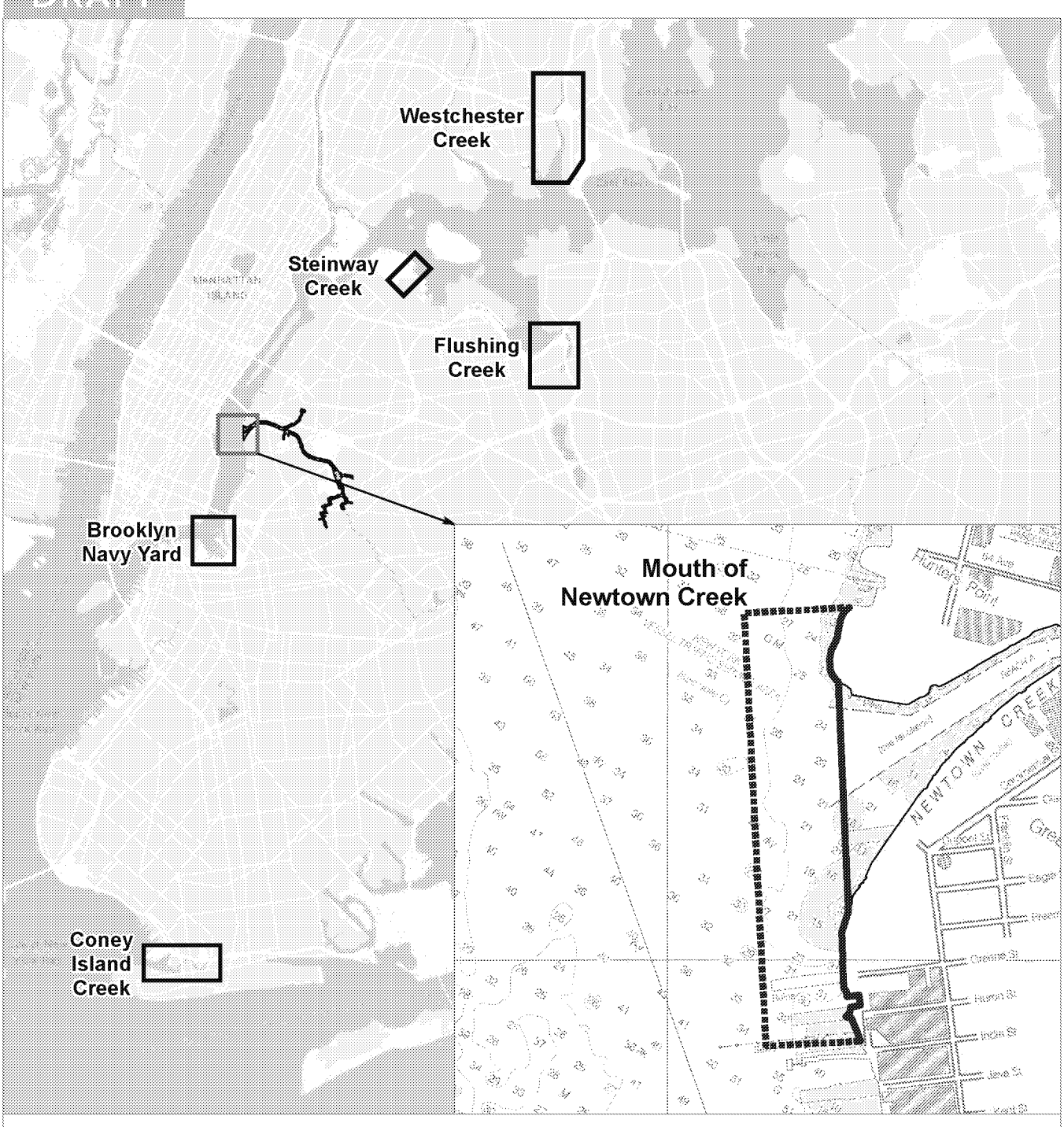
Figure 2
Preliminary Target Areas
Statement of Work for Early Action Focused Feasibility Study
Newtown Creek

DRAFT



LEGEND:

- Navigation Channel
- Newtown Creek
- CM 0–2 Early Action Area
- RI Reference Area Boundary
- Proposed Additional Reference Area

NOTES:
1. Base data: Esri World Light Gray Canvas and NOAA Raster Nautical Charts (RNC)
2. Creek mile hatches are shown every tenth mile and labeled every half mile.

0 2
Miles

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Figure 3
Reference Areas
Statement of Work for Early Action Focused Feasibility Study
Newtown Creek