Kosciuszko Bridge Project

Archaeological Work Plan

PIN X729.77
Kosciuszko Bridge over Newtown Creek
Kings & Queens Counties, New York
February 2013
# TABLE OF CONTENTS

**EXECUTIVE SUMMARY** .......................................................................................................................... 1  
**A. INTRODUCTION** .................................................................................................................................. 2  
   **A.1. Existing Conditions** ............................................................................................................................. 2  
   **A.2. The Selected Alternative** ...................................................................................................................... 3  
**B. ARCHAEOLOGICAL SENSITIVITY AND RESOURCE POTENTIAL** ......................................................... 4  
   **B.1. Prehistoric Site Sensitivity** .................................................................................................................. 5  
      **B.1.a. Prehistoric Resource Potential** ...................................................................................................... 5  
      **B.1.b. Prehistoric Resource Potential in Excavation Footprints** .......................................................... 6  
   **B.2. Historic Site Sensitivity/Archaeological Potential** ............................................................................ 7  
      **B.2.a. Brooklyn** ....................................................................................................................................... 7  
      **B.2.b. Queens** ....................................................................................................................................... 7  
      **B.2.c. Historic Resource Potential in Excavation Footprints** .......................................................... 8  
   **B.3. Previously Identified Archaeological Sensitivity in the Refined APE** ............................................... 8  
**C. RESEARCH DESIGN** .............................................................................................................................. 11  
   **C.1. Prehistoric Research Issues** ............................................................................................................ 12  
   **C.2. Historic Research Issues** ................................................................................................................ 12  
**D. METHODOLOGY** .................................................................................................................................... 15  
   **D.1. Phase IB Monitoring (Identification)** ............................................................................................... 17  
      **D.1.a. Consultation Protocols During Monitoring** ............................................................................... 19  
      **D.1.b. Data Recovery Protocol During Monitoring** ............................................................................ 19  
      **D.1.c. Archaeological Monitoring and Contractor Special Notes** .................................................... 20  
      **D.1.d. Archaeological Resource Identification** .................................................................................... 20  
   **D.2. Phase II Investigations (Site Evaluation)** ....................................................................................... 20  
      **D.2.a. Test Units** ................................................................................................................................. 21  
   **D.3. Phase III Investigations (Data Recovery)** ....................................................................................... 21  
      **D.3.a. Data Recovery Plan** .................................................................................................................. 21  
      **D.3.b. Phase III Excavations** .............................................................................................................. 22  
      **D.3.c. Phase III Documentation** ......................................................................................................... 22  
**E. INADVERTENT DISCOVERY OF HUMAN REMAINS** ............................................................................ 23  
**F. ARTIFACT PROCESSING AND ANALYSES** .................................................................................... 23
F.1. Artifact Analyses ..................................................................................................................23
F.2. Curation .................................................................................................................................23

G. TECHNICAL DOCUMENTATION ...............................................................................................24
   G.1. Draft Report ........................................................................................................................24
   G.2. Final Report ........................................................................................................................24
   G.3. Public Outreach ....................................................................................................................24

H. REFERENCES CITED ................................................................................................................25

I. LIST OF PREPARERS ..................................................................................................................28

APPENDIX A: Addendum to 2007 Phase IA Study

Figures

Figure 1: Kosciuszko Bridge Existing Conditions

Figure 2: Proposed Improvements

Figure 3: Archaeological Potential for Prehistoric and Historic Resources in the Brooklyn APE

Figure 4: Archaeological Potential for Prehistoric and Historic Resources in the Queens APE
List of Tables

Table 1: Area and Depth of Construction Feature or Activity ............................................................. 4
Table 2: Archaeological Sensitivity and Current Conditions ................................................................. 6
Table 3: 2007 And Revised Archaeological Sensitivity In The Refined Ape  ...................................... 8
Table 4: Areas of Archaeological Potential in the APE ........................................................................ 10
Table 5: Prehistoric Research Domains, Theme, Questions, and Datasets ....................................... 12
Table 6: Historic Research Domains, Themes, Questions, and Datasets ......................................... 14
Table 7: Recommendations for Potential Archaeologically Sensitive Blocks in the Refined Ape ....... 16
Table 8: Archaeological Sensitivity and Construction Activity by Block............................................. 18
EXECUTIVE SUMMARY

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration, prepared an Environmental Impact Statement (EIS) to study possible solutions for the improvement of the Kosciuszko Bridge, which carries the Brooklyn-Queens Expressway (BQE) over Newtown Creek. The EIS focuses on a 1.1-mile segment of the BQE from Morgan Avenue in Brooklyn to the Long Island Expressway (LIE) interchange in Queens and evaluated options for the rehabilitation or replacement of the bridge.

A Cultural Resource Survey Report (Appendix M in the EIS) was prepared to document the results of the cultural resource investigations conducted as part of the Kosciuszko Bridge Project. The purpose of the survey was to identify archaeological sites and architectural properties within the Area of Potential Effect (APE) that are eligible for inclusion in the New York State Register and/or National Register of Historic Places (S/NRHP). However, because the APE is currently covered by pavement and/or concrete, buildings, or contains contaminated soil, archaeological testing has not been conducted to verify the presence or absence of resources. A Memorandum Agreement (MOA) was prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA) and 36 CFR 800.6. The MOA requires modification of the Draft Archaeological Work Plan (AWP) developed in 2008, based on a refined direct APE associated with the preferred alternative. As stipulated in the MOA, the purpose of the AWP is to outline procedures for the identification and evaluation of archaeological resources, and to “include procedures for monitoring during construction to investigate potential archaeological resources in areas with the APE identified as sensitive, but which will not be accessible until construction begins…” (MOA Stipulation III.B.-C.). Archaeological monitoring during construction is the recommended approach for the entire Refined APE.

Archaeological investigations covered in this work plan include Phase IB archaeological monitoring of construction activities (identification of cultural resources) based on archaeological sensitivity by block, Phase II excavation strategies to determine NRHP eligibility of cultural resources, Phase III (data recovery) approaches to mitigate project effects to NRHP-eligible archaeological sites. Archaeological monitoring will be conducted within the APE for direct effects and designated as moderate to high sensitivity for intact archaeological resources.
A. INTRODUCTION

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), prepared an Environmental Impact Statement (EIS) to study possible solutions for the improvement of the Kosciuszko Bridge, which carries the Brooklyn-Queens Expressway (BQE) over Newtown Creek. The EIS focuses on a 1.1-mile segment of the BQE from Morgan Avenue in Brooklyn to the Long Island Expressway (LIE) interchange in Queens and evaluated options for the rehabilitation or replacement of the bridge.

A Cultural Resource Survey Report (Appendix M-1 of the EIS) was prepared to document the results of the cultural resource investigations conducted as part of the Kosciuszko Bridge Project. The purpose of this survey was to identify archaeological sites and architectural properties within several different Alternatives’ Areas of Potential Effect (APEs) that are eligible for inclusion in the New York State Register and/or National Register of Historic Places (S/NRHP). This effort partially fulfills the requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended and its implementing regulations, 36 CFR 800. It also meets the requirements set forth in the New York State Environmental Quality Review Act and the New York State Historic Preservation Act. Cultural resource investigations for NYSDOT projects must meet professional standards incorporated in the March 2004 New York State Education Department Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on New York State Department of Transportation Projects (SED Scope) (New York State Museum 2004) in order to comply with the requirements of 36 CFR 800.2 (a)(1).

Because the originally proposed APEs were covered by pavement and/or concrete, buildings or contain contaminated soil, archaeological resources have not yet been identified. A Memorandum of Agreement (MOA) was prepared in accordance with Section 106 of the NHPA and 36 CFR 800.6. The MOA established the requirement for archaeological investigations within a refined Area of Potential Effects (APE) associated with the preferred alternative. An Archaeological Work Plan (AWP) was created to address potential archaeological resources (Appendix M-4 of the EIS).

The preferred alternative has been selected and 40% design plans have been prepared. This resulted in the refinement of the archaeological APE, and a reassessment of archaeological potential within the Refined APE (HPI 2012). The AWP was revised based on the Refined APE. Archaeological investigations covered in this Revised AWP include provisions for Phase IB archaeological monitoring at the time of construction (the identification of cultural resources). If warranted, this Revised AWP also provides details for Phase II excavation strategies to determine NRHP eligibility of cultural resources, and Phase III (data recovery) approaches to mitigate project effects to NRHP-eligible archaeological sites. Archaeological monitoring will be conducted in specific impact locations (i.e., excavation footprints for footings and abutments) designated as moderate to high sensitivity for intact archaeological resources. This revised plan will be reviewed and approved by the FHWA, the NYSDOT, and the NYSHPO prior to implementation.

The archaeological investigations will be conducted following the standards of the SED Scope, and in accordance with the professional standards of the New York Archaeological Council and the New York State Historic Preservation Office (NYSHPO).

A.1. Existing Conditions

The primary objective of the Kosciuszko Bridge EIS Project was the evaluation of possible improvements to the Kosciuszko Bridge, which crosses Newtown Creek between Brooklyn and Queens. Improvements are needed to address transportation, safety and structural deficiencies currently affecting the bridge. The selected alternative entails constructing a new bridge parallel to the existing bridge. This effort also includes construction of a bikeway/walkway, intersection reconstruction, and safety improvements to the highway and to local streets affected by the project.

The Kosciuszko Bridge, which carries a 1.1-mile segment of the BQE over Newtown Creek between Morgan Avenue in Brooklyn and the LIE interchange in Queens, cannot effectively carry the present volume of traffic. Built in the 1930s, the bridge’s narrow lane widths, steep grades, lack of shoulders, and short merge/weave
distances near ramps and interchanges do not meet current highway design standards. These design deficiencies, combined with the approximately 190,000 vehicles using the bridge each day, result in stop-and-go conditions during the morning and evening peak periods, and severe congestion throughout much of the midday. The delay that results on the bridge encourages many drivers to seek alternate routes around the highway congestion by diverting onto already crowded arterials and neighborhood streets in adjacent communities.

The same design problems that affect traffic flow, as noted above, also affect traffic safety conditions on the bridge and adjacent highway segments. Those problems collectively result in an accident rate more than four times higher than found on comparable roads elsewhere in New York State.

The existing bridge (Figure 1) consists of six travel lanes (three eastbound and three westbound). These lanes are approximately 11 ft wide. Standard lane widths should be a minimum of 12 ft wide. The existing roadway grades range from 3.7 percent to 4.3 percent. The standard grade should be a maximum of 3 percent. Shoulders on the existing bridge vary from non-existent to 5 ft. Standard shoulders should consist of 310 ft minimum right shoulders and 14 ft minimum left shoulders. All ramp lanes are forced to merge with through traffic on the highway prior to the Main Span because of inadequate acceleration and deceleration lane lengths. There are no bicycle or pedestrian facilities on the existing bridge.

The project area on both sides of Newtown Creek consists of a highly modified urban landscape. In addition to the residential and commercial development activities undertaken since the late nineteenth century, the margins of Newtown Creek have been filled in to create additional land, and a Long Island Rail Road (LIRR) spur was constructed parallel to the creek on the Queens side.

A.2. The Selected Alternative

The Final EIS was signed by the FHWA on November 25, 2008 and the Record of Decision (ROD) was signed in March 2009 and selected Alternative BR-5 to replace the existing bridge. This alternative best addresses the project’s goals and objectives, as developed in conjunction with the project’s Stakeholders Advisory Committee (SAC). The proposed project includes demolition and replacement of the existing Kosciuszko Bridge between Morgan Avenue in Brooklyn and the LIE (Interstate 495) Interchange in Queens. The proposed project will replace the existing bridge by constructing a new eastbound bridge that will be parallel to and on the eastbound side of the existing bridge and then building a new westbound bridge within the footprint of the existing structure (Figure 2).

Preliminary design plans have been developed to a 40% design level for the project. The plans propose a Cable-Stayed Main Span crossing over Newtown Creek, concrete box girder approach spans, and low level connectors comprised of EPS fill and concrete girder spans at the at-grade street crossings. The project will also require two temporary bridges in order to maintain six lanes of traffic throughout construction. One temporary bridge will be located in Queens above Laurel Hill Boulevard, and the other in Brooklyn above eastbound Meeker Avenue.

In order to limit the increase in local truck traffic, it is anticipated that some construction materials will be delivered to the site via barge requiring temporary platforms in Newtown Creek along the Brooklyn and Queens shorelines. The project will also include at-grade street realignments, utility relocations and construction of a new drainage system.

Ground disturbing activities associated with the construction of Alternative BR-5 include, but are not limited to, the following:

- Excavation for permanent pile supported footings;
- Excavation for permanent spread footings;
- Excavation for abutments;
- Excavation for temporary foundations;
- Relocation of existing utility lines; and/or
The area and depth of excavation varies by construction feature or activity. Based on the preliminary plans the project will have the following below grade impacts (Table 1):

**TABLE 1: AREA AND DEPTH OF CONSTRUCTION FEATURE OR ACTIVITY**

<table>
<thead>
<tr>
<th>Construction Feature/Activity</th>
<th>Bridge Segment</th>
<th>Area of Disruption (approximate)</th>
<th>Depth of Disturbance below current grade (approximate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition of Existing Footings (each)</td>
<td>Connector</td>
<td>80 sf</td>
<td>2 feet</td>
</tr>
<tr>
<td></td>
<td>Approach</td>
<td>1,900 sf</td>
<td>2 feet</td>
</tr>
<tr>
<td></td>
<td>Main Span</td>
<td>6,200 sf</td>
<td>10 feet</td>
</tr>
<tr>
<td>Construction of New Pier Foundations (each)</td>
<td>Connector</td>
<td>70 sf</td>
<td>7 ft</td>
</tr>
<tr>
<td></td>
<td>Approach</td>
<td>900 sf</td>
<td>10 ft</td>
</tr>
<tr>
<td></td>
<td>Main Span</td>
<td>3,500 sf</td>
<td>12 ft</td>
</tr>
<tr>
<td>Installation of New Piles or Drilled Shafts (each)</td>
<td>Connector (Piles)</td>
<td>3 sf</td>
<td>70 ft</td>
</tr>
<tr>
<td></td>
<td>Approach (Piles)</td>
<td>3 sf</td>
<td>85 ft</td>
</tr>
<tr>
<td></td>
<td>Main Span (Drilled Shafts)</td>
<td>30 sf</td>
<td>180 ft</td>
</tr>
<tr>
<td>Construction of Temporary Foundations (each)</td>
<td>Queens Temporary Bridge</td>
<td>80 sf</td>
<td>5 ft</td>
</tr>
<tr>
<td></td>
<td>Brooklyn Temporary Bridge</td>
<td>80 sf</td>
<td>5 ft</td>
</tr>
<tr>
<td>Installation of Piles for Temporary Bridge (each)</td>
<td>Queens Temporary Bridge</td>
<td>3 sf</td>
<td>70 ft</td>
</tr>
<tr>
<td></td>
<td>Brooklyn Temporary Bridge</td>
<td>3 sf</td>
<td>70 ft</td>
</tr>
<tr>
<td>Installation of Piles to be removed (each)</td>
<td>Temporary Platforms</td>
<td>7 sf</td>
<td>85 ft</td>
</tr>
<tr>
<td>Utility Relocations</td>
<td>At-Grade Streets</td>
<td>13,000 sf</td>
<td>3 ft to 5 ft</td>
</tr>
<tr>
<td>Drainage System</td>
<td>At-Grade Streets</td>
<td>11,500 sf</td>
<td>3 ft to 7 ft</td>
</tr>
</tbody>
</table>

**B. ARCHAEOLOGICAL SENSITIVITY AND RESOURCE POTENTIAL**

Background research was conducted to identify the presence of known archaeological sites and architectural resources within the APE. A search of master maps for archaeological sites within or near the project area was conducted at the New York City Landmarks Preservation Commission (NYCLPC) on September 20, 2004, to identify archaeological resources within the project area and to aid in predicting types of resources that may be present. Additional information and map data was gathered from the NYSHPO. No archaeological sites have been formally identified within the APE.

A summary of prehistoric (Native American prior to European contact) and historic (since European contact) development within the boroughs of Brooklyn and Queens was developed to help place cultural resources within a historic context and to aid in predicting the types of resources that may be expected to occur within the project area (Parsons 2006). This information is provided in the Cultural Resources Technical Report.
The potential of finding intact archaeological resources in the APE was analyzed using the modern block as the unit of analysis. The project area consists of urban landscape that has been divided up into blocks, and subdivided into lots. Documentary and cartographic research were used to identify the land use and depositional history in each block, in order to determine the likelihood for the presence of intact archaeological resources. Changes through time for each block were charted through examination of historic maps, including road, railroad, coastal surveys, and insurance maps that depict buildings, structures, shorelines, and topography relevant to this study. Additional data was compiled through examination of local histories, general histories, genealogical sources, historic newspaper articles, aerial photos, and cultural resource management reports. Documentary research indicated that there are no identified archaeological sites within the project area, and also that none of the project area has been surveyed for archaeological resources. However, this research also indicated that there are locations present within the APE that have the potential to contain archaeological resources.

Archaeological potential has two aspects: 1) the archaeological sensitivity for the presence of different site types on the landscape; and, 2) the level of subsequent ground disturbance that affects the likelihood for encountering intact subsurface archaeological remains. Each of these is addressed separately in the attached Appendix A, which serves as an update to the 2007 Phase IA study.

**B.1. Prehistoric Site Sensitivity**

Prehistoric sites that occur in similar environmental settings to the project area include camps, villages, houses, farms, hamlets, palisades, ditches, mounds, middens, trash and storage pits, hearths, processing areas, postholes, bedrock mortars, burials, cemeteries, hunting blinds, fish weirs, and other features related to occupation by Native Americans prior to and immediately after European contact.

**B.1.a. Prehistoric Resource Potential**

It is acknowledged that all archaeological resources contain information but whether that information is such that it contributes to National Register of Historic Places (NRHP) eligibility generally varies by site type and physical integrity.

Areas identified as having low sensitivity for the presence of prehistoric resources are those that are unlikely to contain important archaeological sites. These areas include locations with no documented historic occupations, locations in bodies of water, locations that were not used by past inhabitants, secondary refuse deposits, and isolated finds of artifacts.

Areas identified as having medium or moderate sensitivity for the presence of prehistoric resources include those that are on high ground, along the edges of marshes and wetlands, have agricultural soils, and have low levels of subsurface disturbance, but have undergone higher levels of subsurface ground disturbance. Areas identified as having high sensitivity for the presence of prehistoric resources include those that are on high ground, along the edges of marshes and wetlands, have agricultural soils, and have low levels of subsurface disturbance. Intact prehistoric resources in these areas are likely to contain a wide variety of important information, such as campsites and longhouses, and are usually primary deposits. Ideally, such sites are intact, but even when disturbed, such sites can still offer important information not available from other site types.

Based on documentary and cartographic background research conducted for the project, as well as a more intensive review of existing conditions, the Refined APE was characterized as having a mixed sensitivity for the presence of prehistoric resources, with areas of moderate and high potential identified within the Refined APE (Figures 3 and 4, Table 2). The NYSHPO considers the entire APE archaeologically sensitive for prehistoric sites because of its proximity to water, topography that features high ground overlooking wetlands, the presence of abundant food resources, and the area's known use by Native Americans at contact. However, the high levels of ground disturbance present in many parts of the project area lowers the potential of locating intact prehistoric sites. The creek margins have been filled in to create land, so although intact sites may remain protected beneath the fill, which is up to 25 feet thick, it would be difficult to locate
such sites under the large volume of fill present. Active Long Island Rail Road (LIRR) tracks run along the bluff line parallel to the original creek channel on the Queens side of Newtown Creek, creating a high level of disturbance in a highly sensitive area.

Low levels of disturbance are areas that have seen little direct development or construction, such as backyards, lawns, paved level areas, and undeveloped tracts. Moderate levels of disturbance include locations such as lightly graded paved parking lots, areas covered over with fill, and locations having structures with shallow foundations that minimally disturbed subsurface remains. Highly disturbed areas have structures with deep foundations or foundations placed below grade, or areas where structures were demolished with backhoes or bulldozers with the subsequent debris removed. Locations that have no potential for the presence of archaeological resources are those that have no integrity or intact subsurface remains because the culture-bearing soil strata were removed (e.g., borrow pits, mines, and areas that were highly graded or stripped of soil). The living surface in such locations has been completely destroyed below the level where prehistoric resources would occur.

### TABLE 2: ARCHAEOLOGICAL SENSITIVITY IN REFINED APE AND CURRENT CONDITIONS

<table>
<thead>
<tr>
<th>BOROUGH AND BLOCK NUMBER</th>
<th>REVISED SENSITIVITY</th>
<th>CURRENT CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROOKLYN 2812</td>
<td>Moderate potential for prehistoric resources outside of disturbed locations</td>
<td>Paved; Building</td>
</tr>
<tr>
<td>BROOKLYN 2813</td>
<td>Moderate potential for prehistoric resources</td>
<td>Paved</td>
</tr>
<tr>
<td>BROOKLYN 2814</td>
<td>Moderate potential for prehistoric resources</td>
<td>Paved; Building</td>
</tr>
<tr>
<td>BROOKLYN 2817</td>
<td>Moderate potential for ca.1886-1888 back yard features</td>
<td>Paved; Building</td>
</tr>
<tr>
<td>QUEENS 2515</td>
<td>High potential for prehistoric resources</td>
<td>Paved; Building</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for historical back yard features</td>
<td></td>
</tr>
<tr>
<td>QUEENS 2516</td>
<td>Moderate potential for historical back yard features</td>
<td>Building</td>
</tr>
</tbody>
</table>

Locations within the Refined APE having high potential for intact prehistoric sites include those that are on high ground, along the edges of marshes and wetlands, have agricultural soils, and have low levels of subsurface disturbance. Areas of moderate potential include the same locations, but have undergone higher levels of subsurface ground disturbance. Low potential locations for prehistoric sites include wetlands or former wetlands, and areas that have undergone extensive subsurface ground disturbance. Areas with no potential for intact prehistoric resources include the landfill itself, because it is impossible for intact prehistoric sites to be present within historic made-land, and locations where there is evidence for deep grading and soil removal.

Prehistoric sites that might be present in the Kosciuszko Bridge Refined APE include temporary or permanent habitations and campsites on high ground, shell middens, activity areas, lithic scatters, and possibly the remains of terrestrial sites that were submerged following the rise of sea level after the end of the Pleistocene (e.g., Paleoindian and Early Archaic sites).

**B.1.b. Prehistoric Resource Potential in Excavation Footprints**

Three blocks within the Refined APE (Blocks 2812, 2813, and 2814 in Brooklyn) associated with the selected alternative are designated as having moderate potential for prehistoric resources (Figure 3); one additional
block within the Refined APE (Block 2515 in Queens) is designated as having high potential for prehistoric resources (Figure 4). Preliminary design locations indicate that pile supported footings and permanent spread footings would be excavated in blocks designated as sensitive for potential prehistoric resources. Demolition of existing footings would occur in areas previously disturbed by the original construction of the Kosciuszko Bridge; intact prehistoric resources would not be intact in these areas.

B.2. Historic Site Sensitivity/Archaeological Potential

Detailed land use history and block by block analysis are provided in the Cultural Resources Technical Report Appendices B and C (Parsons 2006), and in Attachment A: Addendum to 2007 Phase IA (HPI 2013). Historic archaeological site types identified in the Refined APE include back yard features such as yard scatter, privies, cisterns, and wells, and potential maritime-related resources in the Newtown Creek.

Based on the documentary and cartographic background research conducted for the project, the study area was characterized as having a moderate sensitivity for the presence of historic archaeological resources, (Figures 3 and 4, Table 2). Locations with moderate levels of disturbance may still contain important historical archaeological resources in the form of cisterns, privies, and foundations, which while possibly truncated, may still retain intact deposits.

B.2.a. Brooklyn

In the Brooklyn portion of the Refined APE, expected historic site types include potential back yard features on Block 2817. Historic domestic deposits such as wells, privies, and primary and secondary refuse deposits dating from the mid- to late-nineteenth century may be expected in the former footprint of this block (Figure 3).

Historic burials are not expected within the Brooklyn Refined APE. A family cemetery associated with the owners of the former Humphrey Clay farm was located in the rear yard of the 1667 Clay/Duryea house (demolished in 1921), north of the Refined APE (in Block 2798). The remains were removed to a local cemetery in the 1890s according to contemporary newspaper accounts in the Brooklyn Eagle.

B.2.b. Queens

In the Queens portion of the Refined APE, expected historic site types include primary and secondary domestic refuse deposits related to domestic occupations such as middens, pits, privies, wells, and as broadcast scatters in yards. Only two blocks, Blocks 2515 and 2516, were designated as potentially sensitive for historic archaeological deposits, as other previously identified sensitive blocks were – with additional research – found to be disturbed.

Historic burials are not expected within the Queens portion of the Refined APE. Old Calvary Cemetery, affiliated with the Catholic Diocese of New York, is outside the project boundaries. The family cemetery associated with the Alsop farm is located within the boundaries of Old Calvary Cemetery, west of the APE. No other family cemeteries have been documented for the area. A small Episcopal church, St. Mary’s, was located just east of the APE, at the corner of 55th Avenue and 43rd Street. There are no records indicating that remains were ever interred at this church or on adjoining properties. There are no documented Native Americans burials or mortuary sites in the project area.

B.2.c. Newtown Creek

Within the Newtown Creek itself, a sensitive area immediately east of and beneath the extant Kosciuszko Bridge was identified by side scan sonar. Target 10 (per Goodwin 2012) is located under the Bridge near the north bank of the Creek and may be impacted by marine operations such as anchors or spuds, sheeting due to the removal of the existing pier or by the placement of rip rap. The dimensions and structure of the anomaly suggest a possible shipwreck. Target 9, is located 110 meters (360 feet) east of the bridge at the center of Newtown Creek and may be impacted by marine operations such as anchors or spuds. It is also near the proposed temporary pier. If these two locations in the creek bed cannot be avoided during the Bridge replacement, then further consultations with SHPO may be appropriate.
B.2.d. Historic Resource Potential in Excavation Footprints

Three blocks within the Brooklyn and Queens Refined APE (Blocks 2515, 2516, and 2817) associated with the selected alternative are designated with moderate potential for historic resources (Figures 3 and 4). Current design locations indicate that excavation of one of two permanent pile footings located in Block 2516 may affect possible historic archaeological resources such as privies, wells, cisterns, and activity areas associated with early twentieth century residential occupations. Demolition of existing footings would occur in areas previously disturbed by the original construction of the Kosciuszko Bridge; intact historic resources are not likely to occur in these areas.

B.3. Previously Identified Archaeological Sensitivity in the Refined APE

The prior Phase IA Archaeological Assessment (Parsons 2007) identified locations of potential archaeological sensitivity in the study area. Several blocks in the refined APE that were identified as potentially sensitive for archaeological resources in 2007, as shown on Attachment A of the MOA (9/28/08) and listed in the Phase IA study (Parsons 2007), that were considered to have mixed (moderate) resource potential (Figure 2). Blocks were identified as sensitive for either precontact resources, historical archaeological resources, or both. Based on the final design alignment, the following blocks that were previously identified as archaeologically sensitive fall within the refined APE:

- Brooklyn: Blocks 2805, 2806, 2808, 2810, 2812, 2813, 2814, and 2817
- Queens: Blocks 2515, 2516, 2517, 2519, and 2520.

In addition to these locations, a cultural resources sensitivity evaluation of the Newtown Creek and immediate shoreline has recently been conducted by R. C. Goodwin and Associates. Goodwin’s findings have not been officially reviewed by city, state, or federal agencies, but a draft report was shared by the authors, R.C. Goodwin and Associates (January 2013).

- A visual survey discovered areas of potential collapsed bulkhead on the creek bed on the south shore of Newtown Creek in the Kosciuszko Bridge APE which may contain structural features from earlier bulkheads, and cultural material from earlier periods of use. Therefore it presents moderate archeological potential.
- Within the Newtown Creek itself, two sensitive areas immediately east of and beneath the extant Kosciuszko Bridge were identified by side scan sonar (Targets 9 and 10). This underwater area appears to be within the project Kosciuszko Bridge APE. The dimensions and structure of the two anomalies suggest possible shipwrecks that have been identified in the draft report as “high archeological potential.”

The archaeological potential on these blocks within the refined APE was refined in this study in order to more tightly focus the archaeological potential of the proposed areas of subsurface disturbance. This was accomplished by reviewing the more complete project construction plans, newly available soil boring logs, and additional data regarding prior development episodes and later disturbances. HPI archaeologists worked with PB engineers to identify the archaeological sensitivity within the APE by reviewing both the engineering plans for the selected alternative and the original Phase IA Archaeological Assessment (Parsons 2007). This critical reassessment was undertaken with the goal of determining the potential extent of archaeological deposits (see Appendix A).

1 Blocks 2813, 2814, and 2817 were not identified as archaeologically sensitive on Attachment A of the MOA, but were identified as archaeologically sensitivity in the Parsons 2007 study. Their omission in the MOA is interpreted as an error. Furthermore,
Table 3 summarizes the originally identified archaeological sensitivity for each of the blocks as per the 2007 Phase IA Archaeological Assessment (Parsons), Attachment A of the MOA, and provides the revised archaeological potential based on the Refined APE and additional information provided in Appendix A to this report.

### TABLE 3: 2007 AND REVISED ARCHAEOLOGICAL SENSITIVITY IN THE REFINED APE

<table>
<thead>
<tr>
<th>BOROUGH AND BLOCK NUMBER</th>
<th>ORIGINAL SENSITIVITY</th>
<th>REVISED SENSITIVITY</th>
<th>REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROOKLYN 2805</td>
<td>Moderate potential for ca. 1866-1888 residential buildings and backyard resources</td>
<td>Moderate potential for ca. 1866-1888 residential buildings and backyard resources</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td>BROOKLYN 2806</td>
<td>High potential for precontact resources northern quarter of block</td>
<td>No sensitivity in Refined APE</td>
<td>Sensitive area is out of Refined APE</td>
</tr>
<tr>
<td>BROOKLYN 2808</td>
<td>Low potential for precontact resources on southwestern edge of block</td>
<td>Low potential for precontact resources on southwestern edge of block</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for late 19th/early 20th C. industrial resources</td>
<td>Moderate potential for late 19th/early 20th C. industrial resources</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td>BROOKLYN 2810</td>
<td>Mixed moderate archaeological sensitivity on Attachment A to the MOA</td>
<td>No Sensitivity in Refined APE</td>
<td>Phase IA (2007) concluded no sensitivity – should not have been carried forward in MOA.</td>
</tr>
<tr>
<td>BROOKLYN 2812</td>
<td>Moderate potential for precontact resources outside of disturbed locations</td>
<td>Moderate potential for precontact resources outside of disturbed locations</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for ca. 1947 structures</td>
<td>No Sensitivity in Refined APE</td>
<td>Late date of buildings post-dates utilities</td>
</tr>
<tr>
<td>BROOKLYN 2813</td>
<td>Moderate potential for precontact resources</td>
<td>Unchanged; moderate potential for precontact resources</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td></td>
<td>Low potential for historical archaeological resources</td>
<td>No Sensitivity in Refined APE</td>
<td>No mapped historical structures on site</td>
</tr>
<tr>
<td>BROOKLYN 2814</td>
<td>Moderate potential for precontact resources in northeastern corner of block</td>
<td>Moderate potential for precontact resources</td>
<td>Review concurred with original assessment</td>
</tr>
<tr>
<td>BROOKLYN 2817</td>
<td>Moderate potential for ca. 1886-1888 historical back yard features on Meeker</td>
<td>Moderate potential for ca. 1886-1888 back yard features</td>
<td>Review concurred with original assessment</td>
</tr>
</tbody>
</table>

---

2 In some instances, the determination of potential archaeological sensitivity in the Phase IA Archaeological Assessment did not match those mapped on Attachment A of the MOA. Some locations identified as archaeologically sensitive were not mapped on Attachment A, and locations not identified as potentially sensitive were mapped incorrectly. These inconsistencies are corrected on Table 3.
Upon completion of the review of archaeological sensitivity, an assessment of archaeological potential, based on the documented disturbance record, was also undertaken (see Appendix A of this AWP). This further allowed archaeologists to refine locations that may yield archaeological deposits. The results are summarized below:

**TABLE 4: AREAS OF ARCHAEOLOGICAL POTENTIAL IN THE APE**

<table>
<thead>
<tr>
<th>BOROUGH AND BLOCK NUMBER</th>
<th>ORIGINAL SENSITIVITY</th>
<th>DISTURBANCE RECORD</th>
<th>ARCHAEOLOGICAL POTENTIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROOKLYN 2805</td>
<td>Moderate potential for ca. 1866-1888 residential buildings and backyard resources</td>
<td>Extensive prior disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>BROOKLYN 2808</td>
<td>Low potential for precontact resources on southwestern edge of block Moderate potential for late 19th/early 20th C. industrial resources</td>
<td>Extensive prior disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>BROOKLYN 2810</td>
<td>Mixed moderate archaeological sensitivity on Attachment A to the MOA</td>
<td>Phase IA (2007) concluded not sensitive for archaeological deposits due to disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>BROOKLYN 2812</td>
<td>Moderate potential for precontact resources outside of disturbed locations Moderate potential for ca. 1947 structures</td>
<td>None documented Late date of buildings post-dates utilities</td>
<td>Moderate potential for precontact resources outside of previously disturbed locations No Potential in Refined APE</td>
</tr>
<tr>
<td>BOROUGH AND BLOCK NUMBER</td>
<td>ORIGINAL SENSITIVITY RECORD</td>
<td>DISTURBANCE RECORD</td>
<td>ARCHAEOLOGICAL POTENTIAL</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------</td>
<td>--------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>BROOKLYN 2813</td>
<td>Moderate potential for precontact resources</td>
<td>None documented</td>
<td>Moderate potential for precontact resources</td>
</tr>
<tr>
<td></td>
<td>Low potential for historical archaeological resources</td>
<td>No mapped historical structures on site</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>BROOKLYN 2814</td>
<td>Moderate potential for precontact resources in northeastern corner of block</td>
<td>None documented</td>
<td>Moderate potential for precontact resources</td>
</tr>
<tr>
<td>BROOKLYN 2817</td>
<td>Moderate potential for ca. 1886-1888 historical back yard features on Meeker</td>
<td>None documented</td>
<td>Moderate potential for ca.1886-1888 back yard features</td>
</tr>
<tr>
<td>QUEENS 2515</td>
<td>Moderate potential for precontact resources</td>
<td>None documented</td>
<td>Moderate potential for precontact resources</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for historical back yard features</td>
<td>None documented</td>
<td>Moderate potential for historical back yard features</td>
</tr>
<tr>
<td>QUEENS 2516</td>
<td>Moderate potential for precontact resources</td>
<td>Extensive prior disturbance</td>
<td>No potential for precontact resources in Refined APE</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for historical back yard features</td>
<td>None documented</td>
<td>Moderate potential for historical back yard features</td>
</tr>
<tr>
<td>QUEENS 2517</td>
<td>Moderate potential for precontact resources in Phase IA</td>
<td>Extensive prior disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>QUEENS 2519</td>
<td>Moderate potential for historical resources</td>
<td>Extensive prior disturbance and sensitive area is out of refined APE</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>QUEENS 2520</td>
<td>Moderate potential for precontact resources</td>
<td>Extensive prior disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td></td>
<td>Moderate potential for landfill retaining devices and railroad features</td>
<td>Extensive prior disturbance</td>
<td>No potential in Refined APE</td>
</tr>
<tr>
<td>NEWTOWN CREEK</td>
<td>None</td>
<td>None documented</td>
<td>Moderate potential for historic shipwrecks (Targets 9 and 10) Bulkhead on shoreline³</td>
</tr>
</tbody>
</table>

### C. RESEARCH DESIGN

Research contexts provide the basis for determining the kinds of data collected and the analyses performed given the specific characteristics of the resource and the nature of the investigation. Research contexts also establish a standard for assessing the research potential of archaeological resources which are usually evaluated for eligibility for inclusion to the NRHP. Broad research contexts must be identified and specific research domains, themes, and questions must be defined. Research contexts indicate the types of site

³ Goodwin’s assessment of the Newtown Creek was completed in 2012, after the original 2007 Phase IA study was completed for the KB project.
information that may be important and are considered along with the level of site integrity required for NRHP eligibility determinations. The research contexts provide the framework within which to assess the information potential of a site and focus the types of analyses performed. Research objectives for this archaeological work plan include identifying appropriate prehistoric and historical research domains within temporal constraints, and defining research themes and questions associated with the contexts. During revision of this archaeological work plan and preparation of data recovery plans, regional and local contexts will be developed and refined, and specific research questions will be identified based on archaeological site data.

C.1. Prehistoric Research Issues

Research topics applicable to prehistoric sites can be general, regional, and local, and site or artifact specific (Table 3). Current approaches to archaeological method and theory prioritize issues of chronology, technology, intrasite patterning, settlement systems, and subsistence systems; only after these broad issues are addressed can more specific questions about individual behavior, agency, or topics be examined; appropriate artifact types and (contextual) quality of archaeological data must be sufficient to address such complex issues. Many of the gaps in the current understanding about prehistoric lifeways come the lack of appropriate types of fine-grained data in suitable quantities needed to answer complex behavioral questions.

C.2. Historic Research Issues

The themes, questions and datasets that can be addressed by data from historical archaeological sites differ in some respects from those concerning prehistoric sites (Table 4). These differences are mainly related to the availability of historical documents and records that may provide identities of individuals linked to each site. The historical record and the archaeological record can be considered parallel, unique, and complementary sets of data, that offer sometimes differing or contradictory views of the past (Deagan 1988).

TABLE 5: PREHISTORIC RESEARCH DOMAINS, THEMES, QUESTIONS AND DATASETS

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Theme</th>
<th>Research Question</th>
<th>Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Periods</td>
<td>Paleoenvironment</td>
<td>What types of environmental change occurred during this time period? What types of local environmental settings were selected and why? What was the role of eolian erosion and deposition during the Archaic time period and how does it affect site formation processes?</td>
<td>Information needed to assess paleoenvironment includes sites with stratigraphy with distinct soil layers, preserved pollen to examine vegetation changes, and macrofloral remains to identify vegetation.</td>
</tr>
<tr>
<td>Chronology</td>
<td></td>
<td>What types of projectile points can be used to refine the chronological placement of sites during this time period? Does the variability in projectile point styles reflect functional differences or chronological differences?</td>
<td>Information needed to assess chronology includes securely dated feature contexts or stratigraphic contexts (with datable organic materials) with associated projectile point types.</td>
</tr>
<tr>
<td>Lithic Technology</td>
<td></td>
<td>How are lithic materials procured: embedded strategies during seasonal rounds or focused lithic procurement forays? Are different lithic materials utilized for tool types? Are different types of technology employed based on the forms of lithic materials procured (i.e., quarried vs. cobble collection)?</td>
<td>Information needed to assess lithic procurement strategies and production technologies includes identification of local and non-local material types, distances to specific lithic source locations, presence or absence of cortex, type of debitage and cores and comparison of tool types with material types (e.g., curated tools of non-local materials or expedient tools of local cobbles).</td>
</tr>
<tr>
<td>Settlement Patterns</td>
<td>How are different types of Paleoindian and Archaic sites (i.e. base camps, temporary camps, and procurement sites) distributed across the landscape? Household Settlement Patterns- What types of Woodland period house forms exist? What kinds of variability may be expected in Woodland period house forms? Community Settlement Patterns- What types of features are interrelated in consistent patterning that may represent household clusters in the Woodland period? How are household clusters associated and patterned within the Woodland period community? Regional Settlement Patterns- What types of Woodland period sites occur on the landscape and what environmental zones are they associated? Can seasonal rounds be identified?</td>
<td>Information needed to assess settlement patterns includes site and various types of resource locations (i.e., water sources, ecozone boundaries). Information needed to assess Woodland period household settlement patterns includes intact subsurface features with associated living floors. Information needed to assess Woodland period community settlement patterns includes groups of associated features such as intact living floors, postholes, thermally altered stone concentrations, and discrete activity areas. Information needed to assess Woodland period regional settlement patterns includes site and resource location information; floral and/or faunal remains that are seasonally discrete.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Subsistence Practices</td>
<td>What types of subsistence resources were procured and processed by Native American groups through time?</td>
<td>Information needed to assess subsistence practices includes preserved floral and faunal remains and food processing tool kits.</td>
<td></td>
</tr>
<tr>
<td>Ceramic Technology</td>
<td>What manufacturing variability occurs within Woodland period ceramic types? What variability occurs in surface treatment within Woodland period ceramic types and does it reflect manufacture or social identifiers? Does the variability of cordage twist within and between Woodland period ceramic types demonstrate ethnic group affiliations or regional interaction patterns?</td>
<td>Information needed to assess Woodland period ceramic technology includes adequate samples of ceramic types containing information on temper, inclusions, manufacture (technique [modeling or coil], thickness, firing), surface treatments (both interior and exterior), and decoration. Information needed to assess cordage variability includes adequate samples of Woodland period ceramic types exhibiting cord marks or net impressions to examine cordage twist and net construction.</td>
<td></td>
</tr>
<tr>
<td>Trade and Exchange</td>
<td>How are trade items incorporated into the existing material culture in the Contact period?</td>
<td>Information needed to assess trade and exchange includes the presence of Euro-American trade goods and utilitarian items from the Contact period.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 6: HISTORIC RESEARCH DOMAINS, THEMES, QUESTIONS, AND DATASETS

<table>
<thead>
<tr>
<th>Research Domain/ Time Period</th>
<th>Theme</th>
<th>Research Question</th>
<th>Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Economy</td>
<td>Agricultural Production</td>
<td>How did agricultural decline and industrial development between 1800-1830 affect the agricultural production of the occupants of the historical sites? What types of agricultural/livestock activities were emphasized by the occupants of the historical sites between 1800-1830? How did the range, variability and content of the agricultural families' production and consumption strategies adapt to the changing farming economy and to increasing industrialization from 1830-1880? How did the agricultural reform movement and the change in crop focus affect agricultural practices, processes and products from 1830-1880? Did the occupants of the historical sites shift their agricultural focus from staples to perishables in the early 1900s?</td>
<td>Economic practices through time are investigated by studying the layout of a rural farmstead complex, as represented building foundations and archival information. Other archaeological and historical investigations have compared the layout and square footage of tenant and owner occupied rural houses, as well as the configuration of the farm complexes from which they stemmed. Datasets required to address economic practices include archival research (i.e., deeds, tax records), archival maps identifying building function, discrete clusters of temporally and functionally diagnostic artifacts used to determine building function and consumption patterns (i.e., refuse disposal areas), vertical stratigraphy with datable contexts, horizontal distribution of temporally and functionally diagnostic materials, economic indexing of vessel remains, and faunal and floral remains including butchering marks on bone (e.g., farm butchered [chopped or hand sawn] versus commercial butchering [electric saw]).</td>
</tr>
<tr>
<td>Agricultural Tenancy</td>
<td>Were the types of occupations owner occupants or tenants? Was there a difference in the types of agricultural production between the owner occupants and tenants?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer Behavior/ Lifeways</td>
<td>What types of food consumption patterns are evident from the different occupations of the historical sites? Were food choices based on cost, ethnicity, time period or site function? Were more food items produced and processed locally at different periods of time? Were more food items procured from town at different periods of time? Were containers reused and adapted or discarded?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing and Trade</td>
<td>Trade and Exchange Networks</td>
<td>To what extent were the occupants engaged in local and regional markets? Did this change through time as a result of increasing accessibility or socio-economic factors? Do changes in consumption preferences/patterns occur with the advent of mass production?</td>
<td>Datasets needed to address trade and exchange include industrialized goods such as cookware, serving ware, bottles, and personal items with established locations and dates of manufacture.</td>
</tr>
<tr>
<td>Landscape</td>
<td>Site and Social Organization</td>
<td>Did the organization of site activities and building function change through time? Do variations in site organization reflect shifts in agricultural practices, socio-economic status, ethnicity, or environmental factors?</td>
<td>Distributions of temporally and functionally diagnostic features and artifact types provide information concerning site function as a residence, specialized activity area (e.g., livestock raising; tool maintenance), or primary or secondary disposal areas. Datasets needed to address site function and land use include archival records of farm building layout, locations of temporally and functionally discrete features, and discrete clusters of temporally and functionally diagnostic artifacts</td>
</tr>
<tr>
<td>Research Domain/ Time Period</td>
<td>Theme</td>
<td>Research Question</td>
<td>Dataset</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Social Group Identity, Behavior and Interaction</td>
<td>Household Composition</td>
<td>How did household composition change through time? Did household composition vary by labor needs or religious affiliation? How did the new concept of class influence the organization of social group identity, behavior and interaction in 1800-1830 occupations? What was the ethnic identity of site occupants? Did the ethnicity of the occupants change through time? How did ethnic identity influence agricultural practices and site organization? How did the various households compare and contrast across social, economic, and occupational groupings? And how did they compare and contrast over time? Does the material culture, particularly ceramics, reflect status differences between site households through time?</td>
<td>Datasets needed to address social information such as household composition (e.g., gender, age), socioeconomic status, and ethnicity include archival research (i.e., county and school records, census or city directory entries); temporally diagnostic gender-specific artifacts such as thimbles, perfume bottles, curlers, cuff links, garter belt snaps, lingerie pins; temporally diagnostic age-specific artifacts such as baby bottles, metal toys, miniature china sets, and doll parts; temporally diagnostic ethnic-specific artifacts such as ornamental items or religious jewelry, beads, crystals, cowrie shells, or colonoware; temporally diagnostic luxury items such as fine china, and ornamental lamp parts.</td>
</tr>
<tr>
<td>Maritime Resources</td>
<td>Transportation Networks, Expansion of shoreline</td>
<td>Landfill retaining devices can be a potentially important resource, and differs in content and context from site to site. Additionally, ships were sometimes sunk as landfill between slips and along the shoreline. Ships and their associated artifacts found in this context are often well preserved and can provide information of significant historical value regarding the shipping and mercantile industry. Earlier bulkheads should be assessed for potential importance with two issues in mind, that is, the type of joinery techniques employed and the effects of adopting steam driven piles.</td>
<td>Previous archaeological studies on the wharves and piers of New York have focused primarily on resources dating to the eighteenth and very early nineteenth centuries. The mid-nineteenth century transition to the pile driven wharves has not been documented up to this point, leaving a potential gap in our knowledge of the history of wharf construction. Each extant sunken ship has a distinct research potential profile. In some cases the construction techniques of a particular vessel type are not fully understood. Investigations could provide additional information about New York’s transportation networks.</td>
</tr>
</tbody>
</table>

**D. METHODOLOGY**

The refinement of the APE and reassessment of the archaeological potential within the refined APE based on the selected alternative and the documented prior disturbance record (Appendix A) has greatly reduced...
the potential sensitivity area and tightly focused locations of potential archaeological resources. This study has concluded that many of the project blocks formerly identified as potentially sensitive for precontact and/or historical archaeological deposits have not retained their integrity, or that the area of potential sensitivity falls out of the proposed KB final design reconstruction impact area. In conclusion, the examination for this refinement process indicates that a total of four blocks in Brooklyn and two blocks in Queens are considered to have archaeological potential in locations that would be potentially disturbed by the final design plans for the KB project (see Table 4 and Appendix A of this AWP).

In Brooklyn, Blocks 2812, 2813 and 2814 were found to have locations that may be potentially sensitive for precontact resources, while Block 2817 was found to have locations that may be potentially sensitive for historical resources. The identified locations of potential sensitivity are located outside of the existing KB footprint, either in the roadbed or in adjacent city blocks. An archaeological testing plan is recommended for each of these blocks, as described herein.

In Queens, Block 2515 was identified as potentially sensitive for both precontact and historical archaeological deposits, while Block 2516 was identified as having the potential for historical archaeological deposits. The identified locations of potential sensitivity are located outside of the existing KB footprint, in city blocks. An archaeological testing plan is recommended for each of these blocks.

Table 5 below summarizes recommendations for further actions based on the revised APE, and the assessment of archaeological sensitivity summarized in Table 2. Pre-construction testing is not feasible because standing structures and pavement that prohibits subsurface access will not be removed until the time of construction. Archaeological monitoring during construction is the recommended action due to the extent of pavement throughout the APE, and difficulty of investigating areas of sensitivity through the usual methods of archaeological survey and testing.

**TABLE 7: RECOMMENDATIONS FOR POTENTIAL ARCHAEOLOGICALLY SENSITIVE BLOCKS IN THE REFINED APE**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BLOCK</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brooklyn</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2812</td>
<td>Limited archaeological monitoring during reconstruction of the KB.</td>
</tr>
<tr>
<td></td>
<td>2813</td>
<td>Limited archaeological monitoring during reconstruction of the KB.</td>
</tr>
<tr>
<td></td>
<td>2814</td>
<td>Limited archaeological monitoring during reconstruction of the KB.</td>
</tr>
<tr>
<td></td>
<td>2817</td>
<td>Limited archaeological monitoring for historical shaft features in discrete locations in the Meeker Avenue roadbed south of the KB during reconstruction of the KB.</td>
</tr>
<tr>
<td>Queens</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2515</td>
<td>Limited archaeological monitoring during reconstruction of the KB.</td>
</tr>
<tr>
<td></td>
<td>2516</td>
<td>Limited archaeological monitoring during reconstruction of the KB.</td>
</tr>
</tbody>
</table>
Archaeological investigations covered in this work plan include:

- Addressing a small portion of the Newtown Creek shoreline and creek bed if avoidance is not feasible;
- Phase IB archaeological monitoring of construction activities (identification of cultural resources) based on archaeological sensitivity by block and locations of project-related impacts;
- Phase II excavation strategies to determine NRHP eligibility of cultural resources; and,
- Phase III (data recovery) approaches to mitigate project effects to NRHP-eligible archaeological sites. Phase IB, Phase II, and Phase III investigations will be conducted during construction of this project in order to match field investigations to the final impact footprint of the KB replacement.

Based on the Refined APE, a qualified professional archaeologist, that meets, at a minimum, National Park Service Standards (36 CFR Part 61) would undertake the archaeological monitoring during construction.

Archaeological work areas will be secured through the installation of fencing or similar materials. All utilities will be clearly identified prior to the initiation of archaeological excavation.

If, at any point during the archaeological investigations or construction monitoring described in this work plan, human remains are encountered, the procedures described in the attached New York State Department of Transportation (NYSDOT) Procedures In The Event of Inadvertent Discovery of Human Remains During Construction (2012) shall be followed. In addition, permit procedures for the removal and re-interment of any recovered human remains will be in compliance with NYC Dept of Health and Mental Hygiene (DOH) law.

D.1. Phase IB Monitoring (Identification)

Archaeological monitoring of construction excavations in the sensitive locations of the Refined APE will provide the optimum opportunity to identify and recover archaeological resources. Archaeologists will inspect the construction excavations in areas designated as high and moderate potential for prehistoric archaeological resources and in areas identified with the potential to contain intact historic resources.

Archaeologists will be allowed into the construction excavations as needed, to identify and assess archaeological deposits, and will be allotted adequate time to clean, inspect, and record the soil profiles as appropriate. A representative sample of diagnostic artifacts may be collected at this time to aid in the identification of the age and/or function of particular deposits. Protocols for access to construction excavations are provided in Section D.4.c.

The level of recording at each location will be determined by the archaeologists. If the depths extend below 1.5 m (5 ft), archaeologists will observe the excavation from the street level and request specific soil deposits be temporarily piled beside the excavation in order to closely examine them. It may be necessary to temporarily halt excavation to enter the construction excavations at the 1.5 m (5 ft) depth in order to observe the deeper deposits. If intact deposits are identified below 1.5 m (5 ft), all health and safety concerns will be addressed prior to the archaeologists entering the confined space to examine the deposits.

Information acquired during the monitoring may be used to estimate the recording requirements for adjacent construction installations. The documentation of soil deposition in one location may be sufficient for adjacent areas. If the depositional sequence is determined to be a continuation of that already recorded, the level of documentation may be greatly reduced from detailed field drawings to important depth measurements and photographic recording.
Hand excavation of features or cultural layers identified during monitoring activities will occur as needed to assess the deposits. Generally, excavation floors will be scraped as needed to identify cultural features and profiles will be cleaned to identify stratigraphy. Features and cultural layers encountered during monitoring activities will be left intact in preparation for follow-on data recovery investigations if warranted. Screening of excavated soil will be judgmental based on the presence of archaeological features and/or artifacts.

Complete field records will be maintained throughout the monitoring, and include daily field notes and both black and white, and color photographs. Field notes and profile section drawings will be recorded for all construction excavations that are monitored. A representative wall from each excavation will be drawn to scale and the profile section will be photographed using digital photography. Where appropriate, plan views will be drawn to scale and photographed. Any features encountered will be documented as they occur within the excavations. Archaeological excavation will not attempt to recover more material from any feature than is necessary to evaluate its research potential during monitoring; additional feature excavation may be required during subsequent data recovery efforts. The location of all unit proveniences will be recorded on a site map. All field information will be documented according to the SED scope (New York State Museum 2004).

All artifacts older than 50 years will be placed in sealable polyethylene bags by stratum. These bags will be numbered and labeled with complete provenience information using indelible marker. Provenience information from each bag will be recorded on a bag inventory sheet. Complete field records will be maintained throughout the testing phase, and include daily field notes and color digital photographs. Any modern artifacts will be described and returned to their respective trenches during backfilling.

If NRHP-eligible archaeological sites are identified during construction monitoring, additional Phase II and/or Phase III data recovery investigations as specified in Section D.3, below, will be developed in consultation with the NYSHPO and implemented prior to construction to retrieve significant information before all or part of the site is destroyed by construction.

All Phase IB monitoring will be consistent with the standards set forth in the SED Scope (New York State Museum 2004).

Archaeological monitoring will be conducted in each area within the Refined APE that exhibits the potential to contain intact prehistoric or historical deposits and corresponds to specific construction activity (Table 5).

### TABLE 8: ARCHAEOLOGICAL SENSITIVITY AND CONSTRUCTION ACTIVITY BY BLOCK

<table>
<thead>
<tr>
<th>Block</th>
<th>Prehistoric Archaeological Site Type</th>
<th>Construction Activity</th>
<th>Historic Archaeological Site Type</th>
<th>Construction Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2812</td>
<td>Temporary and permanent campsites; special use and resource processing areas</td>
<td>TO BE DETERMINED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2813</td>
<td>Temporary and permanent campsites; special use and resource processing areas</td>
<td>TO BE DETERMINED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2814</td>
<td>Temporary and permanent campsites; special use and resource processing areas</td>
<td>TO BE DETERMINED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2817</td>
<td></td>
<td></td>
<td>Back yard features such as privies, wells, cisterns</td>
<td>TO BE DETERMINED</td>
</tr>
<tr>
<td>2515</td>
<td>Campsites, middens and activity areas;</td>
<td>TO BE DETERMINED</td>
<td>Back yard features such as privies, wells, cisterns</td>
<td>TO BE DETERMINED</td>
</tr>
</tbody>
</table>
### D.1.a. Consultation Protocols During Monitoring

1. The Archaeologist will immediately notify the Engineer In Charge (EIC) regarding any archaeological deposits found and provide a preliminary estimate of the expected down time needed to complete documentation or data recovery.

2. The Archaeologist while meeting with the EIC, will notify the NYSDOT Region 11 Cultural Resources Coordination (CRC) by telephone regarding any potentially important archaeological deposits and provide an estimate of time needed for Data Recovery. The NYSDOT will discuss with the EIC how the data recovery will affect the construction schedule and activities.

3. Based on the cultural deposits and features, and the time schedule, the NYSDOT in consultation with the NYSHPO will determine if data recovery should be implemented. A condensed schedule for review of the data recovery plan will be negotiated with the NYSHPO.

4. If data recovery is authorized, the Principal Investigator will provide the NYSDOT and the EIC a preliminary scope of work and budget for the data recovery. If data recovery will not begin immediately, the contractor will be responsible for securing the site. The EIC will inform the contractor of this and of the expected delays and how to proceed. If the data recovery begins immediately, the EIC will inform the contractor of this and the contractor will be required to make any modification deemed necessary by the EIC to complete the project in a timely manner while insuring the safety of the archaeologists.

### D.1.b. Data Recovery Protocol During Monitoring

1. Data recovery or treatment and mitigation may consist of archaeological recording of information observed in construction excavations or archaeological excavation of important deposits within the planned construction area. In general, data recovery of the feature will be limited to the excavation work limits.

2. A major difficulty in the archaeological data recovery and monitoring is the unknown depth and type of archaeological deposits located in the current project area. Trenches up to 1.5 m (5 ft) deep are accessible to archaeologists for direct inspection and recording. When the excavations exceed the 1.5 m (5ft) depth then the sidewalls of the trench must either be sloped or shored to protect workers in the trench. The shoring methods will be determined by the contractor. Trenches and excavations may be stepped at a ratio of 1.5:0.5 m according to OSHA standards for trench excavation deeper than 4 feet (U.S. Department of Labor, OSHA 1995).

3. If archaeological data recovery is necessary at depths below 1.5 m (5 ft) the recordation of the uppermost 1.5 m (5 ft) of deposits is necessary before any shoring is installed to the depth of the installation. Shoring placed alongside the trench at these locations must be placed to minimize the disturbance of the archaeological deposits at the base of the trench.

Another way of conducting archaeology at depths below 1.5 m (5 ft) consists of the initial trench excavation to 1.5 m (5 ft), archaeological inspection and recording of the exposed soil profile, and then the placement of a trench box (shield) to the 1.5 m (5 ft) depth if the depth of impact changes in order to continue archaeological excavation by hand below this depth.
D.1.c. Archaeological Monitoring and Contractor Special Notes

1 Archaeologists have the authority to halt the construction process at any time if archaeologically sensitive materials are encountered. The onsite lead archaeologist will immediately notify the EIC or his designated representative to halt construction activities.

2 Archaeologists may require the equipment operator to slow excavations in select areas to evaluate soils for the presence of potentially sensitive archaeological features.

3 Archaeologists will need to enter the excavations to record and inspect soils and deposits.

4 If shoring of the excavations is necessary, archaeologists may require a temporary halt to monitoring at 1.5 m (5 ft) to document and record the excavations prior to any damages that may occur during shoring.

5 The contractor may need to keep the excavations dry from ground water through pumping.

6 The discovery of important archaeological remains may require monitoring of construction to stop for longer periods of time for data recovery. The time frame for data recovery will depend on the nature of the remains and the required level of documentation.

7 In general, the contractor should expect delays due to the discovery and documentation of archaeological features and/or deposits during monitoring.

D.1.d. Archaeological Resource Identification

Archaeological resources identified during monitoring will be categorized by type: background scatter of archaeological material, Type I, Type II, Type III and Type IV finds. Each type of archaeological resources will require different time and effort considerations when evaluating the resource.

A background scatter of archaeological material is comprised of various small finds representing a scatter of archaeological material and does not represent important archaeological resources. For this work, the following typology has been developed to assess any finds.

Type I finds correspond to a large, individual archaeological artifact, such as a historic cannon, which provides specific archaeological information and is recovered from either a primary or secondary context.

Type II finds represent potential archaeological features that require a short period of time to identify, evaluate, and mitigate the resource due to the relatively small extent (both vertical and horizontal) of the archaeological resource. An example of a Type II find would be an isolated prehistoric archaeological feature, represented by fire-cracked rock, lithic debitage, pottery and broken or burnt shells.

Type III finds represent potential archaeological features that require a moderate period of time to identify, evaluate, and mitigate the feature. An example of a Type III find would be a series of historic shaft features or a fish weir.

Type IV finds represent potential archaeological features that require a significant period of time to identify, evaluate, and mitigate the feature. An example of a Type IV find would be a pier, cribbing, dock or landfill stabilization structure.

It is likely that Type II, III, and IV finds during trenching will be evaluated to determine research potential and physical integrity (requirements for determining eligibility to the NRHP) through Phase II investigations.

D.2. Phase II Investigations (Site Evaluation)

Archaeological sites encountered during Phase IB trenching will be recorded and evaluated prior to the initiation of construction activities. Based on trenching results, additional areas may be excavated using contiguous 1 x 1 meter unit blocks, to determine the type, extent, and NRHP eligibility of identified archaeological sites. Overburden may be removed by mechanical means. All Phase II investigations will be
consistent with the standards set forth in the SED Scope (New York State Museum 2004). NYSHPO will likely include the NYCLPC in the agency consultation and communication process.

**D.2.a. Test Units**

Phase II investigations in a possibly deeply buried urban context could follow a protocol established specific to site conditions. Where feasible, Phase II testing will consist of test units that will be used to investigate features and artifact concentrations, and to examine the vertical integrity of the archaeological deposits. Test units will measure 1 x 1 meter. Test units containing intact subsoil or B-horizon deposits will be excavated in 10 centimeter arbitrary levels within the natural strata. Any redeposited strata or introduced fill will be removed as individual strata and not excavated in arbitrary levels. Test units will be excavated in feet and tenths of feet. All of the excavated material will be screened through ¼-inch mesh hardware cloth.

Field notes and profile section drawings will be recorded for all test units. A representative wall from each test unit will be drawn to scale and the profile section will be photographed using black and white print as well as color slide film. Where appropriate, plan views will be drawn to scale and photographed. Any features encountered will be documented as they occur within the test excavations. Excavation will not attempt to recover more material from any feature than is necessary to evaluate its research potential, and left intact in preparation for Phase III data recovery investigations which may occur simultaneously. The location of all unit proveniences will be recorded on a site map. Following documentation, all excavations will be backfilled to address any safety concerns.

All artifacts older than 50 years will be placed in sealable polyethylene bags by stratum. These bags will be numbered and labeled with complete provenience information using indelible marker. Provenience information from each bag will be recorded on a bag inventory sheet. Complete field records will be maintained throughout the testing phase, and include daily field notes and both black and white, and color photographs. Any modern artifacts will be described and returned to their respective units during backfilling.

If any Type II, III, and IV finds are considered potentially NRHP eligible and cannot be avoided, then Phase III data recovery investigations will be initiated, in consultation with the NYSHPO.

**D.3. Phase III Investigations (Data Recovery)**

If NRHP-eligible archaeological sites are identified through Phase II evaluation, a focused research design for Phase III data recovery investigations and/or targeted archival research on historic occupations will be developed in consultation with the NYSHPO and implemented prior to construction. Again, NYSHPO will likely include NYCLPC in the agency consultation and communication process Phase III data recovery most likely will include backhoe trenching to identify additional buried deposits or remove overburden and large block excavations to examine horizontal distributions. All Phase III investigations will be consistent with the standards set forth in the SED Scope (New York State Museum 2004).

**D.3.a. Data Recovery Plan**

The data recovery plan shall be prepared by a qualified professional archaeologist that meets, at a minimum, the National Park Service Standards (36 CFR Part 61). The data recovery plan will be consistent with the standards set forth in the SED Scope (New York State Museum 2004), the Secretary of the Interior’s Standards and Guidelines for Identification and Evaluation (48 FR 44720-23), and take into account the Council’s publication Treatment of Archaeological Properties (Advisory Council on Historic Preservation 1980). The data recovery plan will address substantive research questions developed in consultation with the NYSHPO.

The data recovery plan will be prepared and reviewed by NYSDOT, and then submitted to the NYSHPO for expedited review and comment to determine whether the measures are sufficient to avoid, reduce, or mitigate adverse effects to NRHP-eligible archaeological resources. The 15 calendar day review period will begin when verification on the receipt of the data recovery plan, either through phone or email contact, has been received from the NYSHPO archaeologist. The approved data recovery plan will take into account the
NYSHPO comments, and will be implemented prior to construction activities.

**D.3.b. Phase III Excavations**

Data recovery techniques will be consistent with the SED Scope (New York State Museum 2004) and may include, but not be limited to, the following: test units and block excavation, backhoe trenching, and remote sensing.

**D.3.c. Phase III Documentation**

As required in the SED Scope (New York State Museum 2004), an end-of-fieldwork letter summarizing the data recovery activities will be prepared, reviewed and approved by NYSDOT, and then submitted to the NYSHPO no more than 4 weeks after the end of data recovery investigations. The formal draft technical report on the data recovery investigations will be completed within one year after completion of fieldwork.

**CONTRACTOR RESPONSIBILITIES**

1. The contractor is required to maintain a safe work area for the archaeologists in compliance with OSHA standards.

2. When excavations proceed beyond 1.5 m (5ft) than either a 2:1 slope for construction excavations to maintain a safe slope gradient or shoring as per OSHA standards for excavations is needed. The contractor will provide the box or shoring and pumps to prevent the excavations from flooding.

3. The contractor is required to have the EIC or his designated representative onsite at all times, with the authority to halt construction activities if archaeologically sensitive materials are encountered.

4. The contractor is required to notify all construction personnel, particularly machine operators that work should cease immediately when the archaeologists identify any archaeological deposits, PRIOR to the official cessation of construction activities by the EIC or his designated representative. This will prevent additional damage to the archaeological materials or inadvertent burial by continued construction work PRIOR to the official halt of activities.

5. The discovery of important archaeological remains may initiate data recovery. If data recovery is required it may be necessary to leave excavations open overnight or for longer periods of time. It is the contractor’s responsibility to secure the excavations during this period and provide adequate covering.

6. The contractor will provide heavy machinery, an operator, and other equipment necessary for the monitoring and data recovery.

7. NYSDOT will provide a construction plan and schedule to the NYSHPO consistent with the requirements of the Archaeological Work Plan and contains sufficient detail on operation, materials, equipment, and excavation support systems to allow archaeologists to plan for the implementation of the Archaeological Work Plan.

8. Archaeologists request that at least one-week notice will be given prior to the implementation of the Archaeological Work Plan for logistical reasons.

**ARCHAEOLOGIST RESPONSIBILITIES**

1. Archaeologists will comply with the contractors and/or NYSDOT health and safety plan for the project and will be required to wear appropriate personal protective equipment required by this plan.

2. Archaeologists will only enter excavations deemed safe by the contractor and/or NYSDOT qualified excavation personal.

3. Archaeologists will conduct monitoring and data recovery in a time-efficient manner so that undue
delays are not incurred.

4. Archaeologists will conduct all field operations in a professional manner in accordance with professional standards of the New York Archaeological Council and the NYSHPO in compliance with SED Scope (New York State Museum 2004).

5. All archaeological investigations will be conducted by or under the direct supervision of an archaeologist(s), and/or other appropriate cultural resource specialists that meet, at a minimum, the National Park Service Standards (36 CFR Part 61).

E. INADVERTENT DISCOVERY OF HUMAN REMAINS

In the event that human remains are encountered in the Kosciuszko Bridge project areas during archaeological investigations, including construction monitoring, the guidelines outlined in the attached NYS DOT Procedures in the Event of Inadvertent Discovery of Human Remains during Construction (2012) (Appendix B) will be followed.

F. ARTIFACT PROCESSING AND ANALYSES

Artifacts recovered from the archaeological investigations will be processed, cataloged, and analyzed in accordance with the SED Scope guidelines Appendix D (New York State Museum 2004). Artifacts will be cataloged utilizing a computer software cataloging program.

Prior arrangements will be made for the curation and disposition of collections in accordance with the New York Archaeological Council Standards for the Curation of Archaeological Collections (1994). A Section 233 permit from the New York State Museum for excavations on state lands, including rights-of-way will also be obtained. A proposal will be submitted as part of the permit application.

F.1. Artifact Analyses

All non-fragile artifacts will be washed; fragile materials will be dry brushed. All artifacts will be inventoried and cataloged. Cataloging will be dependent on the types of materials. The prehistoric artifacts will be assigned to one of the seven material classes; chipped stone, ground stone, pottery, shell, bone, and other (e.g., grayish-black chert Otter Creek projectile point). Approximate periods of use and/or information concerning cultural tradition will be recorded when appropriate. Historic artifacts will be cataloged according to a New York State Museum system based on South’s classification (South 1977). Each artifact will be first classified as domestic (e.g., faunal, ceramic, bottle glass, or table glass), heating or lighting (e.g., coal or lamp chimney glass), personal (e.g., kaolin pipes, buttons, or toys) or architectural (e.g., brick, mortar, concrete, flat or window glass, or nails). These general categories will be divided to specific groups, based on manufacturing techniques, (e.g., redware, creamware, pearlware, whiteware, hand blown bottles, molded bottles, wrought, cut or wire nails, handmade or machine made bricks). Finally, the artifacts will be subdivided by pattern, form and function (e.g., edge decorated pearlware plate, transfer printed whiteware cup, plain whiteware bowl, molded ironstone platter, olive hand blown bottle, aqua molded bottle, or clear screw top bottle). Where possible time ranges or manufacturing dates will be assigned to these artifacts. Additional attributes will be recorded where they contribute to the determination of the artifact function, temporal range, and/or address specific research needs. This is consistent with NYSOPRHP’s 2005 report requirements (NYSHOPRP 2005).

F.2. Curation

Curation of the archaeological collections and all associated field documentation and analytical materials will be conducted in accordance with the SED Scope guidelines Appendix D (New York State Museum 2004). The collections will be labeled with the project name, site number, and the date of the survey. Field notes and documentation will be copied on acid-free paper, and organized using archival materials. Photographs will be labeled and placed in archival sleeves. The project records and the artifacts will be stored in labeled
acid-free boxes. At the conclusion of the project, all artifacts and field records will be transferred for permanent curation at an appropriate repository in accordance with the SED Scope guidelines Appendix D (New York State Museum 2004).

G. TECHNICAL DOCUMENTATION

As required in the SED Scope (New York State Museum 2004), an end-of-field letter summarizing all archaeological field activities (Phase IB, Phase II and Phase III) will be prepared, reviewed and approved by NYSDOT, and submitted to the NYSHPO no more than 4 weeks after the end of archaeological investigations. Formal technical reports on the archaeological investigations (Phase IB, Phase II and Phase III) are due within one year after completion of fieldwork. As needed, a separate report will be prepared detailing the results of subsequent monitoring of construction activities and any additional archaeological data recovery work resulting from identification of archaeological resources during monitoring. The technical reports will be prepared in accordance with the SED Scope guidelines (New York State Museum 2004).

G.1. Draft Report

Draft reports will be prepared in Microsoft Word format, and will follow the established outline presented in the SED Scope guidelines (New York State Museum 2004). Pertinent photographs, maps, and line illustrations will be included. The American Antiquity style guide will be used for general formatting. Other specific report guidance will conform to the SED Scope guidelines (New York State Museum 2004). Draft reports will be reviewed and approved by NYSDOT prior to submittal to the NYSHPO.

G.2. Final Report

Following receipt of review comments from the NYSDOT, the NYSHPO and any other parties, final reports will be produced, incorporating all comments, as appropriate. The final report will be delivered 30 days after the receipt of all review comments from the NYSDOT and the NYSHPO. A compact disk containing the final report in Adobe Acrobat format (pdf) is required. Final reports will be reviewed and approved by NYSDOT prior to submittal to the NYSHPO.

G.3. Public Outreach

Public dissemination of the results of all archaeological activities associated with the project should occur. Public outreach materials may include, but not be limited to, project pamphlets, archaeological displays, and an archaeological/historic resources link on the NYSDOT Kosciuszko Bridge project webpage containing:

- Weekly updates on the progress of archaeological activities including photographs;
- Copies of the Data Recovery Plan(s); and,
- Copies of the Technical Report(s).
H. REFERENCES CITED

II. BIBLIOGRAPHY

Advisory Council on Historic Preservation

Beers, Frederick W.

Bromley, George W.

Bromley, George W. and Walter S.

1909  Atlases of the City of New York, Borough of Queens: from actual surveys and official plans by George W. and Walter S. Bromley. Philadelphia.

Deagan, Kathleen
1988  Neither History nor Prehistory: Questions that Count in Historical Archaeology. Historical Archaeology 22:7-12.

Department of Health of Brooklyn New York

Dripps, Matthew
1869  Map of the City of Brooklyn being the former cities of Brooklyn and Williamsburg in the Town of Bushwick. M. Dripps, New York and Brooklyn.

Goodwin, R. Christopher & Associates

Hopkins, G. M.

Hyde, E. Belcher

New York Archaeological Council
1994  Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State. Adopted by the New York State Office of Parks, Recreation and Historic Preservation.
New York City Department of Highways (NYCDOH).

New York State Department of Transportation

New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP)

New York State Museum
2004 The New York State Education Department (SED) Cultural Resources Survey Program (CRSP) Work Scope Specifications for Cultural Resources Investigations for New York State Department of Transportation Projects. Prepared by the New York State Museum in coordination with the Department of Transportation and the Office of Parks, Recreation and Historic Preservation.

Parsons

Parsons Corporation and the Louis Berger Group (Parsons)

PB Americas, Inc. (PB)

Robinson, Elisha
1886 Robinson’s Atlas of the city of Brooklyn, New York : embracing all territory within its corporate limits; from official records ... / by and under the supervision of E. Robinson and R.H. Pidgeon, civil engineers. New York.

Riker, James

Sanborn Fire Insurance Maps

South, Stanley

Sperr, Percy Loomis
1938 Brooklyn: Meeker Avenue - Van Dam Street. Available at: digitalgallery.nypl.org/nypldigital/dgkeysearchdetail.cfm?trg=1&strucID=390251&imageID=705683f&total=4&num=0&word=Brooklyn%20Van%20Dam&s=1&notword=&d=&c=&f=&k=0&Word=&Field=&sScope=&sLevel=&sLabel=&sort=&imgs=20&pos=1&e=w#_seemore. Site accessed 2/20/12.
Ullitz, Hugo
1898-99 Atlas of the Brooklyn borough of the City of New York: originally Kings Co.; complete in three volumes ... based upon official maps and plans ... / by and under the supervision of Hugo Ullitz, C.E. Hyde and Company, Brooklyn.

1903 Atlases of New York city. / Atlas of the borough of Queens, city of New York: based upon official plans and maps on file in the various city offices; supplemented by careful field measurements and personal observations / by and under the supervision of Hugo Ullitz. / First and second wards: Long Island City and Newtown. E. Belcher Hyde, Brooklyn.

1912 Atlases of New York city. / Atlas of the borough of Queens, city of New York: based upon official plans and maps on file in the various city offices; supplemented by careful field measurements and personal observations / by and under the supervision of Hugo Ullitz. E. Belcher Hyde, Brooklyn. Updated from 1908.

U.S. Coast Survey (U.S.C.S.)
1844 Map of New-York Bay And Harbor And The Environs.


U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), and Federal Railroad Administration (FRRA)

Walling, H. F.


Wolverton, Charles

WWW.HISTORICAERIALS.COM
2012 WWW.HISTORICAERIALS.COM. Site accessed 5/22/12.

WWW.OASISNYC.NET
2012 WWW.OASISNYC.NET. Site accessed 2/21/2012 and 5/22/12
I. LIST OF PREPARERS

2007:
Susan L. Bupp, Cultural Resources Specialist/Senior Archaeologist, Parsons
B.A., 1977, Anthropology, Wichita State University, Kansas;
M.A., 1981, Anthropology, University of Wyoming, Laramie;
Years of Experience: 32

2012:
Cece Saunders, Principal, Historical Perspectives, Inc.
B.A., Anthropology, Rollins College
M.A., Anthropology, University of Connecticut
Years of Experience: 32

Faline Schneiderman, Project Director, Historical Perspectives, Inc.
B.A., Anthropology, Business Administration, State University of New York at New Paltz
M.A., Anthropology, University of Connecticut
Years of Experience: 26

Carol Wynperle, P.E., Parsons Brinckerhoff
B.S., Civil Engineering, Bucknell University
Years of Experience: 13
LEGEND:
- EXISTING FOOTINGS
- PROPOSED FOOTINGS
- AREA WITH POTENTIAL PRECONTACT ARCHAEOLOGICAL SENSITIVITY
- AREA WITH POTENTIAL HISTORICAL ARCHAEOLOGICAL SENSITIVITY
- PROPOSED STRUCTURE
- TEMPORARY DOCKS

FIGURE 4: REFINED ARCHAEOLOGICAL APE: SENSITIVITY LOCATIONS IN QUEENS
A discussion of archaeological potential as it pertains to the 2012 Refined APE is provided for each of the blocks identified as archaeologically sensitive in the Phase IA report (Parsons 2007). In addition to the refined sensitivity, based on a review of additional maps and atlases, the disturbance record of each potentially sensitive location was also assessed. Documentary and cartographic research on land use and development provided information on the level of ground disturbance in each block. Recently completed soil boring logs were also reviewed to further assess subsurface conditions (see attached boring logs). Late nineteenth and early twentieth century development activities may have disturbed or destroyed prehistoric resources. Documented activities such as grading, soil stripping and excavation have removed soils containing archaeological resources in some locations. Disturbed sites lack integrity and have limited research potential. Information on the level of disturbance contributed to the archaeological potential for each location identified as potentially sensitive. The result is that some locations are no longer judged to have archaeological potential.

A. BROOKLYN:

Block 2805

Block 2805 is located between Varick and Meeker Avenues, and Van Dam and Cherry Streets, on the northwest side of the KB. The Phase IA documentary study concluded that the block was not sensitive for precontact resources within the proposed impact area because of the early 19th century construction and demolition of a manufacturing building, and because of subsurface disturbance caused by the construction of the KB in 1939 and the reconstruction of the bridge approach in the 1970s. It was, however, determined to be potentially sensitive for ca.1866 - ca.1888 residential buildings and backyard resources (e.g., wells and privies) (Parsons 2007).

The entire block appeared to have been undeveloped farmland in the 1840s, and sloped downward from west to east (U.S.C.S. 1844). In 1869 three structures appeared on the west end of the block in the APE (Dripps 1869). The 1886 Coastal Survey showed one structure south of Meeker Avenue in the approximate location of Block 2805. In 1888 it appeared that the structures include a house fronting onto Meeker Avenue and a stable that falls within the planned Cherry Street footprint, while the rest of the block was vacant (Sanborn 1888). These buildings were present in 1898-99 (Ullitz 1898-99), and were gone by 1905 (Hyde 1905; Sanborn 1907). A one- and two-story brick parking garage was constructed by 1916 in the approximate location of the former backyard of the mid-19th century house, covering the former location of both outbuildings (Hyde 1916). In 1933, two buildings covered the entire portion of Block 2805 in the project site (Sanborn 1933). The block was severely truncated at its south end by the construction of the KB and approach ramps in the 1930s.

In 1971 the eastbound and westbound ramps to the KB were demolished within and adjacent to Block 2805 and the area of ground disturbance from demolition and reconstruction included the southern half of the block (NYCDOH 1971). A temporary ramp was constructed to the south of the eastbound ramp in 1971, situated within Cherry Street immediately to the south of this block.

Archaeological Sensitivity: Upon closer inspection of the late-19th century maps, the only portion of Block 2805 that could be potentially sensitive for historical shaft features is at its original (ca. 19th century) southwestern corner, which is now underneath the KB and associated entrance and exit ramps. This area, approximately 80’ north/south and 100’ east/west in size, would have contained the backyard of the 19th century house.

Documented Disturbance: This location was disturbed by not only the construction and subsequent demolition of a ca. 1916 parking garage, but also by the construction of the KB and the subsequent demolition and rebuilding of the entrance and exit ramps. A 1938 photograph of the south end of Block 2805 at the corner of Van Dam Street and Meeker Avenue shows that the block itself is elevated considerably above the surrounding street beds – by at least 10’ - and that the site is being actively used as a junk yard (Sperr 1938). Currently, the block is level with surrounding streetbeds, indicating that there was extensive grading undertaken when roads were laid out and regulated and the block elevation was reduced.

There are currently two sets of bridge abutments and four brick fascias with subsurface support structures crisscrossing the former backyard area of the 19th century dwelling, and plans call for new footings slightly south of existing footings (Existing Plan and Elevation Sheet 2 Proposed General Plan Sheet 4, February 2012; see attached
APPENDIX A: Addendum to 2007 Phase IA

Preliminary Structure Plans). Water and sewer lines run beneath Cherry Street to the south of the former location of the stable. Bridge construction and reconstruction, extensive grading, and prior disturbance from 20th century building construction and demolition, strongly suggest that there is only an extremely minimal likelihood that historical shaft features remain undisturbed in this tightly confined location (80’x100’) beneath the existing bridge. In all likelihood, grading and 20th century disturbance has eradicated any potential backyard features.

Archaeological Potential: The additional documentary study and assessment of the disturbance records concludes that Block 2805 is no longer considered potentially sensitive for archaeological deposits of potential significance due to 20th century disturbance.

- Block 2806

Block 2806 is located on the northwest side of the KB, and is bounded by Thomas and Cherry Streets, and Stewart and Varick Avenues. It is immediately east of Block 2805.

Archaeological Sensitivity: The Phase IA study concluded that the northern quarter of the block is potentially sensitive for precontact resources.

The archaeological potential for precontact sites is moderate to high in the undeveloped area in the northern quarter of the block, which has low levels of disturbance. The block is roughly 500 feet west of the former shoreline of Newtown Creek and therefore may have been used for temporary or permanent campsites and for special use and resource processing areas. There is no precontact archaeological potential in the rest of the block due to prior demolition and disturbance for construction and reconstruction of the ramps and approach to the Kosciuszko Bridge [emphasis added]. (Parsons 2007).

Documented Disturbance: There was no mapped development on the block through at least 1929 (Ullitz 1898-99; Hyde 1904; Bromley 1907, Ullitz 1916; Hyde 1921, 1929), but several structures stood on the block in the 1930s (Sanborn 1933). The portion of the block in the KB APE was disturbed by construction of the KB and approach ramps in the 1930s, and again in the early 1970s with ramp reconstruction.

Currently within Block 2806 there are three sets of bridge piers (Piers 78, 79, and 80), a bridge abutment at Varick Avenue, and four brick fascias with subsurface support structures crisscrossing the block (see attached Preliminary Structure Plans). Soil boring DM-B-4 taken on the south side of Cherry Street just west of Stewart Avenue reports fill down to at least 10 feet below grade (PB 2010; see attached soil boring logs). Elevations at the intersections of Cherry Street with Varick and Stewart Streets in 1898-99 (38 feet and 29 feet Above Sea Level, respectively) have changed minimally, with the elevation at the corner of Varick and Cherry Street having risen by four feet (now 43 feet and 29 feet, respectively as per Sanborn 1951).

There is very little likelihood that fragile precontact resources could have survived the historic development of Block 2806 and the subsequent bridge-related construction episodes. The creation of the early 19th century North Road to Newtown through the block likely caused additional disturbance. The northern portion of the block that was designated as potentially sensitive for precontact resources due to low levels of historical disturbance is not going to be impacted or disturbed by the proposed KB project as all work is proposed for the existing footprint of the KB and land to the south where there is roughly ten feet of fill reported in a soil boring. As currently planned, pile caps are only to extend to eight feet below grade.

Archaeological Potential: The portion of the block in the APE that will be disturbed (see attached Preliminary Structure Plans) is not considered to have archaeological potential. Unless the design changes and the northern quarter of the block will experience subsurface disturbance, or development to the south of the KB is going to exceed ten feet below grade, no additional archaeological consideration is warranted.

- Block 2808

Block 2808 is bounded by Thomas Street to the north, Scott Avenue to the east, Cherry Street to the south, and Gardner Avenue to the west.
APPENDIX A: Addendum to 2007 Phase IA

Archaeological Sensitivity: As per the Phase IA assessment, there is low potential for precontact archaeological resources on the former bluff area along the southwestern edge of the block. There is no potential for precontact resources on the remainder of the block because of the infilling of the Newtown Creek shoreline, and the block lacks historical archaeological potential (Parsons 2007).

Block 2808 was entirely undeveloped farmland in 1844 (U.S.C.S. 1944), and was undeveloped through at least 1880 (Dripps 1869; Hopkins 1880). In 1888 the American Carbon Works, which occupied much of the center of the block, was labeled as “not running” (Sanborn 1888). It was a one and two story brick and frame building extending into what is now Thomas Street, and was constructed ca. 1882 (Parsons 2007). The 1888 atlas depicted mills for grinding carbon, retorts, a furnace, and an engine room with a 75-foot tall chimney. The factory was still standing in 1898-99 with the same footprint (Ullitz 1898-99). By 1907 only the brick structure with the chimney in the center of the block remained (Sanborn 1907). The block appeared the same in 1916 (Hyde 1916), but by 1929 the entire industrial complex had been razed and replaced by a two-story brick building in the south center of the block and a one-story frame building in the southeast corner of the block (Hyde 1929). In 1933, the frame building served as a fish rendering plant, and it – along with a one-story shed – extended into the unopened Scott Avenue (Sanborn 1933). In the 1930s the KB was built diagonally across the block from Gardner Avenue to Scott Avenue and by 1951, the entire block south of the KB was covered by structures related to the fish rendering plant (Sanborn 1951). While the earliest fish rendering plant structure had been removed by 1965, the remainder of the buildings on the south half of the block remained standing (Sanborn 1965).

Documented Disturbance: Currently there is a one-story building that covers the entire southwestern corner of the block outside the bridge footprint, while the southeastern corner of the block serves as a parking lot. This manufacturing/industrial structure was built in 1975 (Parsons 2007). Underneath the bridge is a shed along Gardner Avenue, and a storage area for roll off containers (Dumpsters). The northeastern corner, just south of the bridge footprint, contains a one-story building also constructed in 1975. The northwestern corner of the block is vacant. Currently there are three sets of bridge piers crossing the block (Piers 84-86) (Existing Plan and Elevation Sheet 3.; see attached Preliminary Structure Plans). Proposed plans call for the construction of three sets of four piers (Proposed Piers 22-24) across the block. The westernmost existing piers fall within the potential precontact sensitivity area identified in the Phase IA study. The original excavation for the bridge piers and multiple prior construction episodes makes it unlikely that shallow and fragile precontact resources within the APE of this block have survived intact. The late 19th century building construction, mid-20th century reconstruction and subsequent demolition, and the 1975 building construction, coupled with the construction of the KB have eradicated precontact potential within the APE.

The Phase IA report concluded that Block 2808 was considered to have low to moderate historic archaeological sensitivity for remains associated with industrial activity in the late 19th and early 20th centuries (Parsons 2007). The buildings that formerly comprised the American Carbon Works plant are not indicated as having basements on any of the historical maps. However, these industrial buildings would have caused subsurface impacts where foundations, below-grade utilities, and machinery support foundations were built. In addition, in order to construct the structures, it would have been necessary to remove any top soil and re-grade and compact the surface; thus the area would have been disturbed to varying depths and any surface or subsurface artifacts would have been destroyed. Foundations were likely to have been relatively shallow. However, the 75-foot tall chimney would have required substantial foundations. This location would have been disturbed by subsequent construction and demolition episodes that would have impacted at least a portion of the factory footprint. Subsurface features such as privies are unlikely to have been present because a sewer was indicated in Thomas Street extending into Newtown Creek as early as 1888 (Sanborn 1888). Given the extremely brief use of the factory (approximately 20 years with gaps of inactivity due to health violations) and subsequent razing and grading of the area, intact refuse deposits are unlikely to exist. Block 2808 is unlikely to contain intact historical archaeological deposits.

Archaeological Potential: The reassessment of archaeological sensitivity within the APE concludes that the block has been disturbed and lacks the potential to yield intact archaeological deposits.

- Block 2810
APPENDIX A: Addendum to 2007 Phase IA

Block 2810 is bounded by Cherry Street to the north, Vandevoort Avenue to the east, Anthony Street to the south, and Morgan Avenue to the west.

Archaeological Sensitivity: Block 2810 is reported as having mixed moderate archaeological potential on Attachment A to the MOA.

Documented Disturbance: The Phase IA Archaeological Documentary Study concluded that the block was not sensitive for either historical or precontact archaeological deposits (Parsons 2007). The 2007 Parsons’ study concluded that the block lacked sensitivity due to extensive mid-20th century development and redevelopment that caused extensive subsurface disturbance to any potential archaeological deposits

Archaeological Potential: The 2007 Archaeological Documentary Study concluded that the block in the APE lacked research potential as it had experienced extensive prior disturbance.

- Block 2812

Block 2812 is bounded by Cherry Street to the north, Varick Avenue to the east, Anthony Street to the south, and Porter Avenue to the west.

Archaeological Sensitivity: The block was identified as having moderate potential for precontact resources where there has not been 20th century development (Parsons 2007). It was also designated as potentially sensitive for structures dating to ca. 1947. However, these structures were built long after sewer and water utilities were available, so there would be no anticipated associated shaft features (e.g., privies, wells, cisterns). While the foundations of these structures may remain buried, there are no anticipated potentially significant archaeological deposits that might be associated with the mid-20th century.

Documented Disturbance: Block 2812 remained undeveloped through the late 1920s (U.S.C.S. 1844; Ullitz 1898-99; Sanborn 1888, 1907; Hyde 1921, 1929). On the 1933 map, much of the block was covered by a contractor’s staging area, and there was a series of one-story small structures bordering Cherry Street, Porter Street, and Anthony Avenue on the west half of the block (Sanborn 1933). There was also a one-story vacant building in the northeastern corner of the block (Ibid.). In 1951 an auto repair building was shown on the northwestern corner of the block, and there were three small one-story garages running through the center of the block from Cherry Street to the south (Sanborn 1951). The entire northeastern corner of the block was vacant at that time, and there were three small one-story buildings in the southern corner of the block (Ibid.).

By 1965, a one-story brick building had been constructed on the northeastern quadrant of the block, but the remainder of the block remained unchanged (Sanborn 1965). In 1979, nothing had changed on the block except for the removal of buildings in the southeastern quadrant (Sanborn 1979).

There are currently three buildings on the north half of the block, in the APE, fronting onto Cherry Street, with parking areas surrounding them. Boring DM-B-2, taken at the southwest corner of Cherry Street and Porter Avenue, reports layers of sandy silt with gravel over glacial till, with no mention of historic or organic levels (PB 2010; see attached soil boring logs). Boring DM-B-3-OW, taken at the west side of Varick Avenue south of Cherry Street, shows gravelly sand with brick, concrete, and slag, designated as possible fill, to five feet below grade. Beneath this are glacial deposits (PB 2010). The soil borings suggest that within the block it is possible that there are undisturbed soils where no prior building construction has occurred that still retain precontact archaeological potential. However, the limited number of boring logs available makes it difficult to understand subsurface conditions throughout the entire block.

Archaeological Potential: The study of archaeological sensitivity and documented disturbance concluded that there is potential precontact sensitivity on undisturbed locations of Block 2812 (Figure 3).

- Block 2813

Block 2813 is bounded on the north by Cherry Street, on the east by Stewart Avenue, on the south by Anthony Street, and on the west by Varick Avenue.
APPENDIX A: Addendum to 2007 Phase IA

Archaeological Sensitivity: Although the block is not depicted as archaeologically sensitive on the Attachment A graphic to the MOA, the Phase IA Documentary Assessment concluded that Block 2813 has mixed moderate precontact sensitivity, and low historical archaeological sensitivity (Parsons 2007).

According to the Phase IA documentary study (Parsons 2007):

Block 2813 was undeveloped farmland traversed by the North Road in 1844. By 1866, the block still appeared to be undeveloped farmland, but the former road appears to have become merely a fenced border between farms... The Hulst farmhouse was probably located approximately 750 to 850 feet north of Block 2813.

No development (except for the North Road to Newtown) is depicted on Block 2813 on maps dating to 1844 (U.S. Coast Survey 1844) and 1866 (U.S. Coast Survey 1866). The undeveloped block was divided into 31 lots by 1880 (Bromley & Robinson 1880). No buildings were standing on the block on any of the maps reviewed (Robinson 1886; Sanborn 1888; Hyde 1898, Sanborn 1907, 1933; Army Map Service 1947, Sanborn 2002a).

Block 2813 was not directly impacted by construction of the approach to the Kosciuszko Bridge and is separated from the bridge approach by Cherry Street. No buildings were standing on the block, and it is likely that no grading took place in the late 1930s in conjunction with construction of the bridge approach. The entire block is currently one undeveloped lot (NYC Government 2004), with a paved parking lot on the eastern half and a tall sand pile (probably for treating local roads) on the western half.

Based upon the review of additional maps and atlases it appears that the block has virtually no sensitivity for historical period archaeological resources other than possible remnants of the Road to Newtown.

Documented Disturbance: None of the maps or atlases reviewed for this 2012 study show evidence that the block has been graded. A comparison of corner elevations in 1916 and 2012 show, if anything, that corner elevations have raised slightly over the last century. This is also reflected in the boring logs reviewed for this study (PB 2010; see attached boring logs). Boring log DM-B-3-OW taken on the west side of Varick Avenue between Cherry and Anthony Streets reports, opposite Block 2813, shows an upper three to five foot level of brown and black gravelly sand with brick and slag, designated as fill, above an area of no recovery, followed by glacial soils (Ibid.). Boring DM-B-4 taken at the northeast corner of Block 2813 in Cherry Street required hand auguring for the first five feet to avoid utility conduits and no samples were taken. Beneath this from five to ten feet below grade was brown silty sand with gravel, red brick, and cinders, which represents a level of fill. At ten feet below grade glacial soils were encountered (Ibid.)

Archaeological Potential: For at least sixty years, the Block 2813 in the APE was partially covered by salt and dirt storage piles as well as shipping containers and trucks (historicaerials.com and http://www.oasisnyc.net/map.aspx; sites accessed May 22, 2012). Therefore, while there may have been some compaction to below-grade soils from these activities, the block appears to have retained precontact sensitivity since there is no evidence of historical period grading or other subsurface disturbance.

- Block 2814

Block 2814 is bounded on the north by Cherry Street, on the east by Gardner Street, on the south by Anthony Street, and on the west by Stewart Avenue.

Archaeological Sensitivity: Although the block is not depicted as archaeologically sensitive on the Attachment A graphic to the MOA, the Phase IA documentary assessment concluded that Block 2814 has mixed moderate precontact sensitivity in the northeast corner of the block, and low historical archaeological sensitivity (Parsons 2007). The documentary study reports:
APPENDIX A: Addendum to 2007 Phase IA

The northern third of Block 2814 is located within the APE. Archaeological potential is low for prehistoric and historic archaeological resources in most of the APE, within the footprints of standing buildings along Cherry Street. Archaeological evidence of the former buildings that once stood within the APE, the two-story stable constructed between 1898 and 1907 (128 Cherry Street) and the Bottle Works1 built between 1907 and 1933 (116-118 Cherry Street), has probably been obliterated by the buildings built over their former locations in the 1960s. However, archaeological potential is moderate for prehistoric archaeological resources in the block’s northeast corner, under a paved parking lot. No evidence of prior construction except for the current parking lot was found on historic maps reviewed. It is unclear whether or how deep grading occurred before construction of the parking lot, so archaeological features may have been preserved. Historic archaeological potential is low underneath this parking lot because it has been an undeveloped portion of the block, and domestic debris is unlikely to occur because it is not situated near the historic farmhouse (the Clay/Duryea house). (Parsons 2007)

Documented Disturbance: A review of historical maps and atlases through the 20th century confirms that there was no mapped development at the northeast corner of Block 2014. This review also suggests that the elevation at the northeast corner of the block has not changed, or may have actually increased from 20.27’ to 24.26’ above sea level suggesting that fill had been added to raise the elevation (Hyde 1921, 1929; PB 2010). Boring DM-B-5-OW, taken on the south side of Cherry Street west of Gardner Avenue near the northeast corner of Block 2814 reports between five and ten feet of brown gravelly sandy gravel with silt and asphalt, essentially fill, above deep levels of glacial till (PB 2010; see attached soil boring logs). The level of fill could account for the reported increase in elevation.

Archaeological Potential: The northeastern corner of Block 20214 in the APE is considered to have moderate potential for precontact resources. Since no disturbance was documented here, and the soil borings document potential levels of fill that could have served to protect fragile resources. Therefore, this portion of the block in the APE has the potential to yield archaeological deposits with research potential.

- Block 2817

Block 2817 is bounded on the north by Meeker Avenue, on the east by Morgan Avenue, on the south by Lombardy Street, and on the west by Kingsland Avenue.

Archaeological Sensitivity: The Phase IA documentary assessment (Parsons 2007) concluded that Block 2817 lacked archaeological potential for precontact resources. However, it was identified as having low to moderate archaeological potential for historical back yard features (wells, cisterns and privies) associated with a row of houses fronting Meeker Avenue built c. 1886-1888 (Robinson 1886, Sanborn 1888).

In 1844, Block 2817 was vacant (U.S.C.S. 1844). In 1869, there were either one or two dwellings fronting onto Meeker Avenue (Dripps 1869), but by 1880 the block was vacant (Bromley 1880). By 1886 the block had been subdivided into city lots, and five framed structures had been built in the northeast quadrant of the block fronting onto Meeker Avenue. One of these structures had a small framed building shown at the southern end of its lot. An additional thirteen structures were built on lots fronting onto Morgan Avenue, but five of these were fronting onto Morgan Avenue and the rest were built further back on their lots (Robinson 1886). On the southeast quadrant of the block, four structures had been constructed along Lombardy Street (Ibid.). The block appears the same in 1888 and 1898-99 (Sanborn 1888; Ullitz 1898-99). By the time that the 1898-99 map was created, sewer and water lines were installed on Kingsland and Meeker Avenues (Ullitz 1898-99).

By 1907, there were nine dwellings and three commercial buildings in the northwestern quadrant of the block, fronting onto Meeker Avenue – some of which were on top of the location of the ca.1869 structures (Sanborn 1907). The northeastern quadrant of the block and southeastern quadrant of the block were basically unchanged from 1899. There was a newly built large industrial complex at the southwestern corner of the block belonging to the American Ice Company, comprising one- and two-story buildings with interior wells and pumps (Ibid.). By 1921, most of the frame buildings on the eastern half of the block appeared to remain, but there were additional brick buildings in the northeastern quadrant, as well as a Vaudeville House fronting onto Meeker Avenue (Hyde 1921). The ice plant had

---

1 The Sanborn 1933 and 1951 actually label this structure as a “Boiler Works” rather than a “Bottle Works.”
APPENDIX A: Addendum to 2007 Phase IA

expanded to front onto Kingsland Avenue as well as the western portion of Lombardy Street. A cooperage complex had also been constructed in the southern central section of the block.

The dwellings fronting Meeker and Morgan Avenues were present until the construction of the KB in the 1930s, at which point they were razed (Sanborn 1933). The remainder of the block, with the exception of the southeastern corner, was covered with industrial buildings through most of the 20th century. By 1951, the majority of the eastern end of the block had been paved for parking (Sanborn 1951).

The archaeologically sensitive areas of Block 2817 are located in what were formerly the back yards of residential structures, having the potential for subsurface shaft features such as privies, wells, and cisterns associated with structures that date to as early as ca. 1886. However, sewer and water lines were present in Meeker Avenue by at least 1898 (Ullitz 1898-99), suggesting that the period of time for which utilities were not available is rather limited.

Documented Disturbance: These potentially sensitive areas for late-19th century residentially related shaft features are now beneath the existing KB from just west of the intersection with Sutton Street to the intersection of Morgan Avenue and in Meeker Avenue (see attached Preliminary Structure Plans). No later disturbance was documented, other than the actual footings of the extant KB.

Archaeological Potential: Only the southernmost proposed piers of the new KB may impact these locations, and these are being placed immediately adjacent to existing piers in locations that have already been disturbed (Proposed Plan and Elevation Sheet 2, February 2012). The other impacts in this area are temporary footings in the sidewalk along Meeker Avenue and across the street under the existing bridge, also to be placed in locations adjacent to existing piers. Based on the location of potential resources and the known disturbance records, portions of the APE on Block 2817 have likely retained archaeological potential for historical era archaeological deposits (Figure 3).

B. QUEENS

• Block 2515

Block 2515 is bounded by Laurel Hill Boulevard to the west, 54th Avenue to the north, 43rd Street to the east, and 54th Road to the south. The BQE runs through the western half of the block.

Archaeological Sensitivity: In the 2007 Phase IA documentary study, the western half of Block 2515 beneath the extant KB was determined to have been too disturbed to contain archaeological deposits (Parsons 2007). The eastern half of the lot was considered to have potential for intact subsurface historical archaeological remains such as privies, wells, cisterns, and activity areas, and low to moderate potential for intact precontact archaeological remains, depending on the actual level of disturbance at each location. However, part of the eastern half of the block was determined to lack archaeological potential for any resource types due to the construction of several large warehouses in the 20th century (Ibid.).

In 1844 and 1852, Block 2515 was vacant (U.S.C.S. 1844; Riker 1852). The Phase IA report stated that the earliest mapped structure on this block could date to as early as 1859 when three buildings were “possibly” located on it (Parsons 2007). Upon closer examination of the 1859 map overlayed with the current impact area, only one of the three structures shown actually falls onto Block 2515 in the APE, and that is located at the western end of the block, now under the KB (Walling 1859). The same building is shown on the 1863 Walling map (Walling 1863), but by 1873 the block is vacant (Beers 1873).

The Phase IA report indicated that there was one building on the east half of the block fronting onto 43rd Street in 1885 (Parsons 2007), but the block was subdivided into lots and vacant on the 1891 atlas – which may or may not have mapped outbuildings and sheds (Wolverton 1891). In 1902 and 1903, there was one wagon shed depicted on the eastern half of the block, but it was not aligned to the modern street grid (Sanborn 1902; Ullitz 1903); this may have been the same structure shown on the 1885 map. By 1902 water lines were present in 54th Avenue (Jones Avenue) and 54th Road (Waters Avenue), as well as 43rd Street (Washington/Hobson Avenue). By 1909, there was both the wagon shed, as well as a new dwelling located at the northeastern corner of the block, fronting onto East 43rd Street (Bromley 1909). The 1912 Ullitz atlas showed the block unchanged, but the dwelling was depicted as a
two-story structure with a basement (Ullitz 1912). Two years later, a second shed was shown in the center of the block to the west of the extant wagon shed (Sanborn 1914).

In 1929, the house was still present, but both sheds were gone. Four additional houses were depicted on the eastern half of the block, fronting onto 43rd Street (Hyde 1929). By 1936, the west half of the block had been taken for the construction of the KB and only the dwelling at the northeastern corner of the block was still present (Sanborn 1936). Where other dwellings formerly stood was now occupied by a lumber yard/warehouse and a small one-story building (Ibid.). By 1971, the entire eastern end of the block was developed with warehouses, except for the northeastern most lot where the early 20th century dwelling once stood (Sanborn 1971). In 1982, the three warehouses were occupied by the New York Syrup Company (Sanborn 1982).

**Documented Disturbance:** A review of additional maps and atlases and available plans (see attached Preliminary Structure Plans) did not identify areas of disturbance to potential resources within the APE.

**Archaeological Potential:** An updated review of the historical maps and atlases has concluded that the block within the APE is sensitive for the following potential deposits; 1) shaft features associated with the ca. 1859 building that could have once been located behind the structure on the western end of the block and east of the KB, and 2) precontact resources outside of the footprints of historical and 20th century buildings and the KB (Figure 4).

- **Block 2516**

Block 2516 is bounded by Laurel Hill Boulevard on the west, 54th Road to the north, 43rd Street to the east, and 54th Drive to the south. The Brooklyn Queens Expressway runs across the western one-third of the block.

**Archaeological Sensitivity:** The Phase 1A documentary study (2007) concluded that this block is potentially sensitive for precontact resources, and potential historical shaft features. A more comprehensive review of the historical maps and atlases reveals the following land-use history for the block.

In 1844 and 1852 the block was vacant (U.S.C.S. 1844; Riker 1852). In 1859 there were two structures located on the north half of the block near its center (Walling 1859). It is unclear if the buildings were depicted on the 1863 map because part of the block is obscured by labeling (Walling 1863). In 1873 the block was depicted as vacant. Two buildings were present in 1885 fronting the west side of 43rd Street (Colton 1885 as cited in Parsons 2007).

By 1891, there were four buildings, row houses, fronting onto the west side of 43rd Street, and two fronting onto 54th Drive (then Jay Avenue – a paper street). By 1902, the four row houses were still depicted fronting 43rd Street, but one of the buildings fronting onto 54th Drive (then Gold Place) had been removed (Sanborn 1902). Utilities were shown in surrounding street beds. The site appeared unchanged from 1903 to 1912 (Ullitz 1903; Bromley 1909; Ullitz 1912). By 1914, the shed to the west of one of the dwellings was depicted as extending out into 54th Drive (Gold Place), indicating that the street had not yet been opened (Sanborn 1914). The block appeared unchanged through 1936 (Hyde 1929, Sanborn 1936), but by 1950 the dwelling at the corner of 43rd Street and 54th Drive (Gold Place) had been removed (Sanborn 1950). In addition, a small structure appeared in the footprint of 54th Drive (Gold Place), to the west of the dwelling. In 1963 a warehouse was constructed at the corner of 43rd Street and 54th Road, at the northeast corner of the block. The block has remained virtually unchanged, although between 1992 and 2002 one of the dwellings fronting 43rd Street was demolished, and in 2011 three additional dwellings were demolished (Sanborn 1971, 1982, 1992, 2002).

It is unclear exactly where the earliest structures stood on the block (ca.1859), and when they were razed. There is the potential for these structures to have had associated shaft features (wells, privies, cisterns), but the location of the yard areas may now be beneath the KB or the warehouse at the northeastern corner of the block. The two houses fronting onto 54th Drive (Gold Place) were built between ca.1885 and ca.1891. The four dwellings fronting onto 43rd Street were built by ca. 1885 and ca. 1891, and may have also had associated shaft features in their backyards since they predate public utilities (sewer and water). Therefore, the block outside of the footprint of the KB and the extant warehouse may be potentially sensitive for shaft features.
Documented Disturbance: The extensive documented historical use of the block described herein has likely eradicated any potential for fragile precontact resources, which are generally shallowly buried and subject to disturbance by historical development.

Archaeological Potential: Block 2516 is considered to have potential sensitivity for historical-era archaeological deposits (Figure 4).

- Block 2517

Block 2517 is bounded by Laurel Hill Boulevard on the west, 54th Drive on the north, 43rd Street on the east, and 55th Avenue on the south.

Archaeological Sensitivity: Although the block is not depicted on Attachment A to MOA, the Phase IA documentary assessment designates it as potentially sensitive for precontact resources on three lots, two fronting 43rd Street and one fronting 55th Avenue, that have never been developed (Parsons 2007). In addition, there were three lots fronting onto 43rd Street that had undeveloped areas in yards between structures. The western half of the block has no potential for intact historic and prehistoric archaeological remains because of the ground-disturbing activities related to the construction of the Kosciuszko Bridge (Ibid.).

Documented Disturbance: An L-shaped building was constructed in stages on much of the project block in the APE. The two-story part of the building, constructed in 1957, fronts onto 43rd Street and extends westward along mapped 54th Drive. A one-story addition was constructed in 1964 south of the western end of the building, bordering onto 55th Avenue. A portion of this structure will be demolished for the construction of proposed Pier 33. The area of potential precontact sensitivity lies to the east of this extension, and will only experience minor disturbance immediately outside the footprint of the building’s extension. A review of maps and atlases from the 20th century found that in 1971 there was a small one-story addition in this location that may have eradicated precontact archaeological potential (Sanborn 1971).

Soil boring DM-B-13 taken at the south side of 55th Avenue south of Block 2517 reported dark grey brown silty sand with gravel and mica from the surface downward, with no evidence of any fill levels (PB 2010; see attached soil boring logs). By five feet below grade, glacial soils were encountered (Ibid.). This suggests that if there were precontact resources deposited in this area, they were not sealed beneath any levels of fill, and were likely shallow enough to have been susceptible to disturbance from 20th century construction episodes.

Archaeological Potential: Block 2517 in the APE is considered to have no precontact research potential due to extensive historical development and subsurface disturbance.

- Block 2519

Block 2519 is bounded by Laurel Hill Boulevard on the west, 55th Avenue to the north, 43rd Street to the east, and 56th Road (former 55th Drive) to the south. The current block encompasses what were formerly Blocks 2518 and 2519.

According to the Phase IA study, the Edward Waters house appears to have been located on this block (Parsons 2007; Riker 1852). The eastern half of the block, which was formerly historical Block 18 east of Cologne Street (historically also known as Atlantic Avenue), will be discussed separately from western part of the block, formerly Block 17, to the west of Cologne Street.

Former Block 18: Although the APE was vacant in 1844, on both 1859 and 1860 maps, there was one structure shown at the north end of the block (U.S.C.S. 1844; Walling 1859, 1860). By 1873, two structures were shown at the northern end of the block (Beers 1873). By 1891, St. Mary’s Episcopal Church (which lacked an associated cemetery) was shown at the northeastern corner of the block, and one frame structure was shown fronting onto 43rd Street near the center of the block (Wolverton 1891).
APPENDIX A: Addendum to 2007 Phase IA

In 1902 the southern end of the block was almost entirely covered by the General Chemical Complex, and by 1912 the complex spread over several blocks, extending south to the Newtown Creek, and later became the Phelps Dodge complex (Sanborn 1902, Bromley 1909 Ullitz 1912). Almost the entire block was ultimately developed.

Archaeological Sensitivity: The Phase IA study (2007) concluded that the only locations of potential archaeological sensitivity were small strips of land on the northern part of the block where there is currently no development, and also just north of the former Phelps Dodge complex.

Documented Disturbance: A review of the location designated as potentially archaeological sensitive indicates that it was formerly a hill that had clearly been leveled as it is now situated below adjacent land immediately to the north by roughly two to six feet (see attached Preliminary Structure Plans). A retaining wall separates the two distinct and differing grades. Therefore, archaeological potential in this location has been severely compromised by this truncation of the landscape.

The former determination of potential sensitivity related to St. Mary’s church in the northeastern corner of the block was based on the assumption that the lot was covered with a paved loading dock that may have sealed in potential archaeological deposits. In fact, the entire lot is now covered by a one-story cinder block building on slab (www.oasisnyc.net). The construction of the building likely eradicated any foundation remains from the ca. 1885 church, but there is the extremely remote possibility that subsurface resources related to the church may remain intact.

Archaeological Potential: A review of maps and atlases has verified that the location of potential sensitivity for archaeological resources has been severely truncated, and therefore lacks archaeological potential. Furthermore, there is an existing building in the location of St. Mary’s Church that will remain standing and no subsurface impacts are anticipated so no further archaeological consideration is warranted.

In addition, while there may be remains from the former Phelps Dodge manufacturing and refining plant, the site is classified as a NYSDEC Class 2 Inactive Hazardous Waste Site, and is currently sealed with concrete surface. Blueprints, plans, historical records, and extensive documentation – including plant records from 1893 to 1982 - on the Laurel Hill Phelps Dodge complex exist in the Long Island division of the Queens Library. No archaeological investigations for this 20th century industrial complex are recommended.

Former Block 17: Former Block 17 constitutes what is now the west half of Block 2519.

Archaeological Sensitivity: This parcel appears to have remained undeveloped until the late nineteenth century, probably because a stream or creek was located just to the west of the area, roughly under what is now Laurel Hill Boulevard. However, because of mapping inconsistencies the 1859, 1860, and 1863 Walling maps suggest it is possible that a structure stood on the southwestern corner of the block during the mid-19th century fronting onto the creek (Walling 1859, 1860). No structures appear to be mapped in this area on late 19th century maps (Beers 1873; Wolverton 1891).

From 1902 through 1912 only one dwelling was present, occupying the entirety of a city lot and facing Laurel Hill Boulevard; it was built on columns, or piers, at the time, possibly because the lot was low-lying and wet (Sanborn 1902, Ullitz 1903, Bromley 1909; Ullitz 1913, Sanborn 1914). The lot is now beneath the Kosciuszko Bridge approach (Sanborn 1914, 1936). The block was completely undeveloped in 1929 (Hyde 1929). By 1936, one of the structures from the adjacent Phelps Dodge complex had extended partially onto the block (Sanborn 1936). By 1951, the south half of the block outside of the footprint of the KB was covered with factory buildings (Sanborn 1951).

The Phase IA assessment concluded that the southwestern triangle to the west of the KB and east of Laurel Hill Boulevard may be potentially sensitive for precontact and historical archaeological resources related to a possible mid-19th century dwelling (Parsons 2007).

Archaeological Potential: Currently, design plans call for no disturbance to the area designated as archaeological sensitive, but if the area is used for staging, it is protected by roughly 20 feet of fill containing gypsum, slag, brick, ceramics, and nails (Soil Boring DM-B-11, PB 2010). Therefore, no impacts are anticipated to this location and no
further archaeological consideration is warranted unless disturbance other than pile-driving is anticipated to extend beyond 20 feet below grade.

While there may be remains from the former Phelps Dodge manufacturing and refining plant, the site is considered to be contaminated, and is currently sealed with a concrete slab. Blueprints, plans, historical records, and extensive documentation – including plant records from 1893 to 1982 - on the Laurel Hill Phelps Dodge complex exist in the Long Island division of the Queens Library.

- **Block 2520**

Block 2520 is currently bounded by Laurel Hill Boulevard to the northwest, 56th Road on the northeast, 43rd Street on the east, and Block 2529 and Newtown Creek to the south.

**Archaeological Sensitivity:** The Phase IA documentary study (2007) concluded that the block is potentially sensitive for deeply buried precontact resources that may lie beneath 20 feet of 19th century fill (Parsons 2007). It was also designated as potentially sensitive for landfill retaining devices, and railroad related features. Furthermore, there were two small areas identified with low to moderate potential for historic resources (Ibid.). For the Phase IA report, the block is subdivided into two separate sections based on their original block numbers; former Block 3 is located west of the KB, while former Block 4 is located east of the KB. These are discussed separately below.

**Former Block 3:** Former Block 3 was an inlet from Newtown Creek through at least 1863 (U.S.C.S. 1844; Walling 1859, 1960, 1963). A train line was built across it by the mid-1850s (U.S.C.S. 1858). Between 1858 and 1873, it appears that the inlet was filled, and nothing is present, other than the railroad tracks (Beers 1873). However, in 1896 a map of the Newtown Creek shows Block 2520 as still partially inundated and that the tracks crossed the creek over a man-made landfill berm (Department of Health 1896). By 1902 the lot had been entirely filled, and there were at least five frame structures on the far western end of the block, and in 1903 it appears that these were all affiliated with the Cavalry Cemetery to the west (Sanborn 1902; Ullitz 1903). The lot was occupied by cemetery-related support structures through at least 1915 (Bromley 1909, Ullitz 1912, 1913, Hyde 1915). By 1929 this section of the block was occupied by two buildings of the J.C. Orr and Company, and the earlier structures had been removed (Hyde 1929). These were razed by 1936, and replaced by the Diamond Chemical Company complex (Sanborn 1936). East of the buildings was a fire-brick tile storage building, a lumber yard with storage and an office. At the extreme eastern end of the block adjacent to the KB was the Falconer Fuel Company with an associated coal yard (Ibid.). The Diamond Chemical Company complex and the fire-brick tile storage building were both present through 1979, although the buildings had changed hands. Throughout the remainder of the 20th century, the block experienced several building episodes with various industrial operations. Buildings stood on the block through 2005 (Sanborn 1941, 1959, 1971, 1982, 2005).

**Archaeological Potential:** Portions of the block that are on landfill were identified as potentially sensitive for deeply buried precontact resources that may have once existed along the Newtown Creek. However, these areas now lie beneath 20 feet of fill (Parsons 2007). Upland areas generally lack precontact archaeological sensitivity due to extensive 20th century development that entailed subsurface disturbance.

Filled locations may be sensitive for mid- to late-19th century landfill retaining devices and deeply buried precontact resources. However, given the time frame of the infilling of the inlet, the late 19th century, and the lack of any affiliated historical development, there is little likelihood of encountering any other type of historical resources. The origin of the fill is unknown,

Current plans call for no disturbance to this portion of the block, to the west of the extant KB. Unless plans change and there will be subsurface disturbance west of the KB that would extend beneath the fill (20 feet or more below grade), no archaeological consideration is warranted.

**Former Block 4:** Former Block 4 is located to the east of the extant KB and east of former Block 3. The block appeared vacant in 1844 and 1852 (U.S.C.S. 1844; Riker 1852). There is a structure shown on the 1859, 1860 and 1863 Walling maps that could potentially fall within this block, or immediately to the north (Walling 1859, 1860, and 1863). In addition, railroad tracks had been laid across the block in the 1850s (Ibid.). In 1873 the block appeared to be vacant, although the house of A. Rapelye appears to be immediately to the east (Beers 1873).
APPENDIX A: Addendum to 2007 Phase IA

According to the Phase IA study, the 1885 Colton map showed that two houses were present along what is presumably the west side of 43rd Street (Washington Street), south of what is now 56th Road (Parsons 2007). However, in 1891 the block appeared to be vacant (Wolverton 1891).

By 1896 the block was occupied by the Nichols Chemical Works (Department of Health 1896). In 1902 through at least 1915, the area west of Atlantic Avenue (a paper road that served to separate former Block 4 from Block 3) was occupied by an elevated cable railway that moved copper ore arriving by boat or train to the ore crusher, located in the block south of this one (Block 2529) (Sanborn 1902; Hyde 1903; Bromley 1909; Ullitz 1912). A number of buildings stood on this block including an office building, refineries, and manufacturing-related structures. By 1914, the complex was part of the General Chemical Works (Sanborn 1914), and Atlantic Avenue was not regulated nor opened, as there are buildings in its footprint.

By 1929, the electric elevated railway had been removed, but the remainder of the buildings in the complex were still present (Hyde 1929). Development episodes continued through the 20th century (Sanborn 1931, 1950, 1971). By 1979 the complex had been taken over by the Phelps Dodge Refining Company (Hyde 1979). In 2000, all of the buildings formerly owned by Phelps Dodge were demolished, and the block is currently vacant.

**Documented Disturbance:** Although the block was identified as potentially sensitive for precontact resources that may have once been deposited on the bluff overlooking the Newtown Creek, the extensive 20th century development has severely disturbed the original topography. The block is not considered potentially sensitive for precontact resources. If there were structures on the block in ca. 1859 that may have had associated shaft features, archaeological potential is also compromised by extensive 20th century development.

**Archaeological Potential:** The documented disturbance coupled with the lack of precision in mid-19th century maps does not allow for accurately locating these potential historical features on the landscape. Coupled with the documented disturbance, the block is no longer considered potentially sensitive for historical archaeological deposits. This site is also classified as a NYSDEC Class 2 Inactive Hazardous Waste Site.

C. NEWTOWN CREEK

**Archaeological Sensitivity:** The Phase IA archaeological assessment did not identify potential archaeological sensitivity in or directly adjacent to the Newtown Creek (Parsons 2007). Subsequently, in 2010, the United States Environmental Protection Agency (USEPA) announced that Newtown Creek was placed on the National Priorities List (NPL), which is the list of hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program. Anchor QEA, a consulting engineering and environmental specialist firm, prepared a comprehensive study on the full array of resources entailed in the remedial action on Newtown Creek. A cultural resources sensitivity evaluation of the Creek and immediate shoreline is a function of Anchor QEA’s study. The archaeological component of the cultural resources study was conducted by the R. C. Goodwin Company.

Goodwin is relying on archaeological reports on file with city and state agencies, including the KB IA study (Parsons 2007), to assist them in identifying sensitive loci both in and along the Creek that might be impacted by clean up procedures. A visual survey and side sonar scans of the creek bed were employed to identify any potential archaeological resources.

Within the Newtown Creek itself, two sensitive areas were identified in the APE; one immediately east of and the other directly beneath the extant Kosciuszko Bridge. According to Goodwin’s report:

Target 10 is located at approximately 1003972.67, 204459.46, at a depth of 12.0 ft (3.7 m) NAVD88 in Newtown Creek. It is composed of one side scan sonar contact, S012 (CR #305-183828P). No magnetic anomalies were recorded that can be associated with Target 10, although the extremely dense contours (i.e., large gradient) would mask any discrete anomalies. S012 depicts a sunken vessel measuring 35.0 x 6.0 ft (10.7 x 1.8 m) with at least 1.0 ft (0.3 m) of relief. The low amplitude acoustic return is indicative of a wooden structure. Some internal structure, at least one transverse frame, can be seen at both ends of the shipwreck. A blanket of sediment has concealed most of the structure, interfering with any acoustic shadow, which is key to interpretation. In addition, an exposed section of pipeline is nearby. The dimensions and structure...
APPENDIX A: Addendum to 2007 Phase IA

of the contact suggest that Target 10 represents a shipwreck with high archeological potential. The minimum area estimated for archeological potential is 131.2 ft² (40.0 m²).

Target 9 is located at approximately 1004132.19, 204160.00, at a depth of 21.0 ft (6.4 m) NAVD88 in Newtown Creek. It is composed of one side scan sonar contact, S011 (CR #307-202507P). No magnetic anomalies were recorded that can be associated with Target 9. S011 depicts an object measuring 24.5 x 24.3 ft (7.5 x 7.4 m). The low amplitude acoustic return is indicative of a wooden structure. In addition, the distinct longitudinal framing pattern (1.0 ft/0.3 m spacing) is clearly defined. The dimensions and structure of the contact suggest that Target 9 represents a wooden shipwreck with high archeological potential. The minimum area estimated for archeological potential is 131.2 ft² (40.0 m²). (Goodwin 2012:89)

Figure 4 depicts the locations of both Targets 9 and 10 in relation to the APE.

Furthermore, a visual survey discovered areas of potential collapsed bulkhead on the creek bed on the south shore of Newtown Creek in the Kosciuszko Bridge APE which may contain structural features from earlier bulkheads, and cultural material from earlier periods of use. Goodwin reports that there was a ferry service across the Newtown Creek near the APE by as early as 1670, and that when Calvary Cemetery was established, a ferry service was provided, at first across the creek to Bushwick, and later directly to 23rd Street in Manhattan (Armbruster 1912:177, 185 as cited in Goodwin 2012); the dock for this service lay close by the former Penny Bridge. Both the 1883 and 1915 USACE maps depict a long pier extending across a large area of tidal flats upstream from the Meeker Avenue bridge; it is likely that, once massive landform modification began along the watershed, the process of filling and bulkheading covered such earlier shoreline facilities. (Ibid.) Therefore, the shoreline in the APE has moderate archeological potential. If this section of bulkhead will be impacted directly by the Bridge replacement, further consideration may be appropriate.
NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) PROCEDURES
IN THE EVENT OF INADVERTENT DISCOVERY OF HUMAN REMAINS DURING CONSTRUCTION

1. If a burial site, human remains, or bones thought to be human remains, are encountered during construction for a DOT undertaking, the work will be stopped immediately and rescheduled to avoid disturbing the area. The remains will be left in place and protected from further damage.

2. In accordance with the latest version of the NYSDOT Updated 2008 Standard Specifications Book, Section 107-01.D. Archaeological Salvage, the Engineer-in-Charge (EIC) will, through proper channels, notify appropriate Department personnel and other authorities. The EIC will report the discovery of human remains to the local police, and the county coroner having jurisdiction, or to the medical examiner, and will arrange immediate inspection of the site.

3. If the site is determined to be part of a criminal investigation, the police will notify the EIC when work in the area may resume.

4. If determined that the remains are not a police issue, the Regional Cultural Resources Coordinator (CRC) will notify the Federal Highway Administration (FHWA), the Office of Parks, Recreation and Historic Preservation/State Historic Preservation Office (OPRHP/SHPO), appropriate Indian tribal contacts, and archaeologists, and arrange site visits accordingly. Work will be temporarily suspended in the area, and measures will be taken to secure the burial site and protect the remains from disturbance.

5. The NYSDOT Office of Environment (OOE), in coordination with the Region, will arrange for professional skeletal analysis to identify the remains as human, if necessary. NYSDOT in coordination with FHWA will invite designated Indian tribal representative(s) to participate in the consultation process. Representatives will be determined on the basis of established Department contacts and identified areas of interest for tribal nations.

6. NYSDOT, in consultation with the OPRHP/SHPO, Indian tribes and other identified consulting parties, will arrange for an archeologist to establish horizontal and vertical extent of the burial(s) and assess measures for avoiding the human remains if possible.

7. Any new location or alignment developed to avoid the burial(s) will be subject to archaeological investigation, and the results will be provided to the OPRHP/SHPO, Indian tribes, and other consulting parties as appropriate for comment before the project proceeds in this area.

8. If the alignment is unchanged, a plan will be developed in coordination with FHWA, SHPO, Indian tribes, and other consulting parties as appropriate to preserve the site and protect the burial(s) before the project proceeds in this area.

9. If removal and reburial of the remains is necessary, it will be undertaken in a manner agreed to by all involved parties. Temporary disposition of the remains until reburial will be determined in consultation with the Indian tribes and other consulting parties as appropriate.

10. Any actions relating to the treatment, disposition, removal, or reburial of human remains will comply with all applicable State and Federal laws and regulations.

---


2 In New York City, the discovery must be reported to the Office of Chief Medical Examiner and to a police officer. In Erie County, the discovery must be reported to the medical director.

3 Assuming archaeologists are not already on-site, monitoring construction activities.